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REG. U. S. PAT. OFF.

VOLUME 126, No. 11 MARCH 11, 1948

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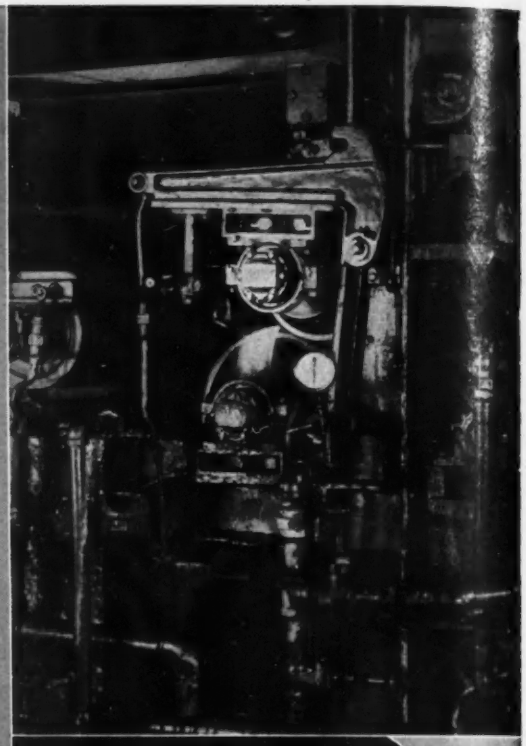

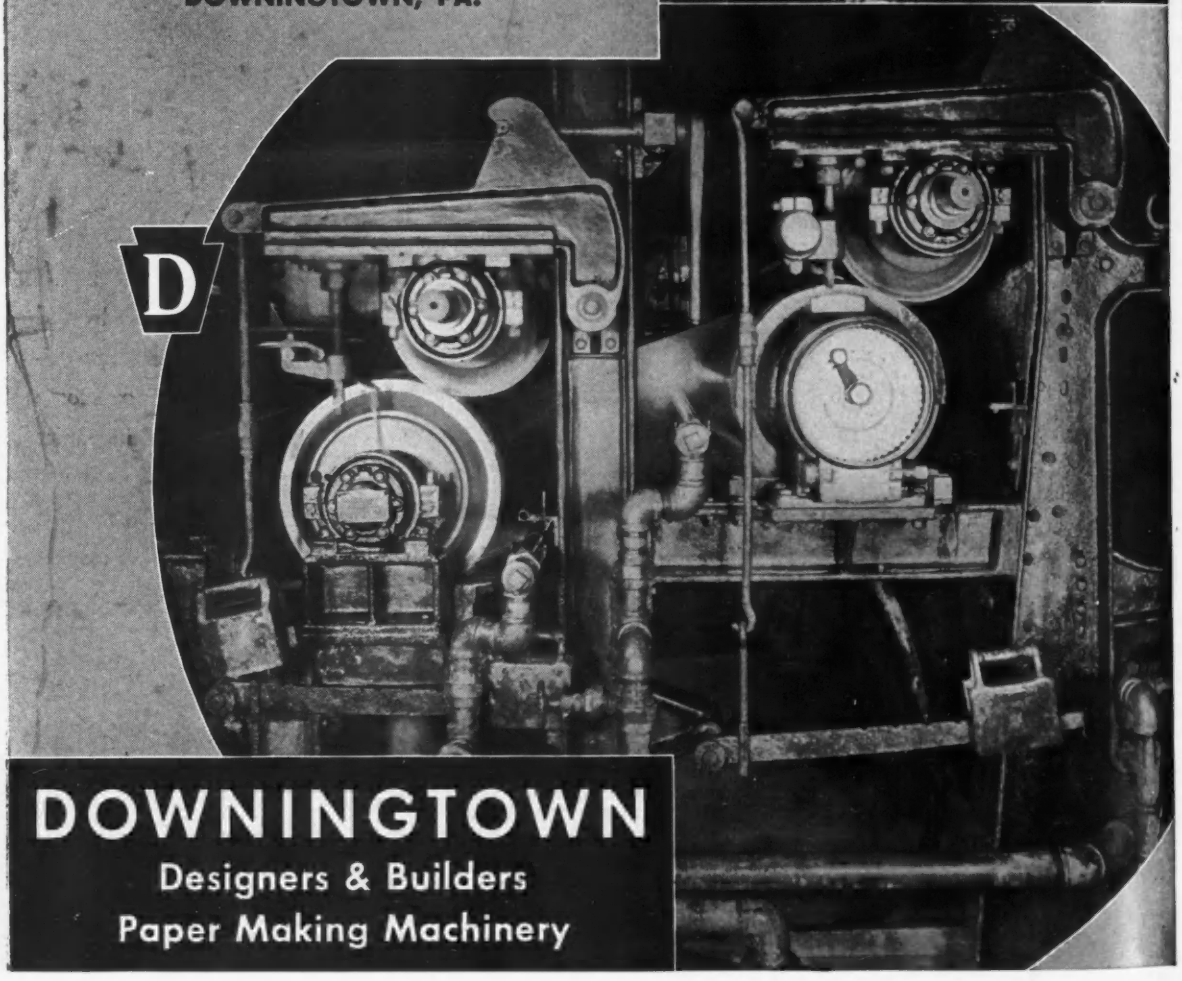

DOWNINGTOWN
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Paper Making Machinery

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CALENDAR OF COMING EVENTS

March 22-24—National Association of Waste Material Dealers, Inc. Annual Convention, Boston, Mass.

May 19, 20, 21, 1948—American Pulp and Paper Mill Superintendents Association, Annual Meeting, Roosevelt Hotel, New Orleans, La.

June 11-12, 1948—Paper & Twine Association, Annual Convention, French Lick Springs, Indiana.

April 5-7—National Paper Trade Association, Annual Convention, The Waldorf-Astoria, New York City.

May 9-12—National Paper Box Manufacturers Association, Annual Convention, Cincinnati, O.

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Paper TRADE JOURNAL

VOL. 126, NO. 11 REG. U.S. PAT. OFF. MARCH 11, 1948

Krug Denies Charge He Blocks Mills

WASHINGTON—Julius A. Krug, Secretary of the Interior, denied at a Senate hearing late last week that his department was blocking the development of Alaskan paper mills.

He asserted that Forest Service of the Agriculture Department was amply authorized to make contracts with pulp companies.

The Secretary testified before the Public Lands Committee on a series of points brought to his attention by Chairman Hugh Butler, who had stated that employes and former employes of the Interior Department were blocking a paper industry in Alaska.

Mr. Krug said that he had been unable to find any support in the department to a statement filed in court by James E. Curry, a lawyer for southeast Alaskan Indians, that "on March 14, 1946, and again in April, 1946, and on October 8, 1947, representatives of the Department of Interior advised the said plaintiffs (the Alaskan Indians) they had full and complete right to cut and dispose of timber and other resources within aforesaid lands."

Mr. Krug said that he realized this was "a very serious charge," and that it would be "investigated to the limit."

Asked if the proposed cutting of timber by the Timber Development Corporation of New York, under contracts made with the Alaskan Indians through Mr. Curry, would be regarded as trespassing, Mr. Krug said that "it is up to the Secretary of Agriculture to see that cutting of timber is not permitted."

Mr. Krug urged that in view of the clouded land title situation in Alaska he be empowered to "sit down with the Indians and negotiate these claims and settle them up in a year or two."

Wisconsin Reservoirs Under Six Per Cent Full

WAUSAU, Wis.—For the first time in the history of the Wisconsin river reservoir system, the total storage on February 29 was below a billion cubic feet, and the Eau Pleine river reservoir contained only five million cubic feet, as compared to its capacity of 4,551 million.

Contents of the reservoir system on February 29 represented only 5.84 percent of capacity, as compared to 7.24 percent on February 22.

RUDOLPHE PARADIS

who has been named by H. M. Lewis, vice-president and general manager of the Sorg Pulp Company, Ltd., to be resident manager at Port Mallon. Mr. Paradis, who is a native of Vancouver, graduated from U.B.C. in 1936 with the degree of B.A. in Chemistry and immediately joined the staff of Pacific Mills, Ltd., at Ocean Falls, where he served for ten years in technical work.

In 1946 he returned to study, first at the University of Washington and later at U.B.C. in the Department of Commerce. On January 2nd this year he was appointed assistant to the general manager of the Sorg Company, and on February 9th took over active management of the Port Mellon mill.

Wausau Negotiations Are Declared Off

WAUSAU, Wis.—Negotiations for the purchase of the Wausau Paper Mills company, Brokaw, have not been successful. Stockholders and bondholders were told March 3 that the New York investment house which had been negotiating for the purchase of the mill had not exercised its option. Lazard Freres & Company entered into negotiations early in December with the mill's stockholders for possible purchase and were given an option to January 28. This date was later extended to March 1.

At the mill, a spokesman said that there was no disappointment because the deal was not completed. "The mill is in good condition, turning out fine paper," he declared. "We will continue making paper."

To Feature Session On Trade Practices

NEW YORK—As the executive offices of the National Paper Trade Association enter the last three-weeks' period before the opening of the association's big annual convention on April 5 at the Waldorf-Astoria a substantial amount of interest is reported to have been shown in the opening feature of the meeting. This feature is to be built around the much-discussed theme of trade practices, and is to be practically double barrelled in its emphasis on the subject. At the opening luncheon, and at the open session which will follow it in the afternoon, trade practices will dominate the program.

Luncheon is set for 1 o'clock in the Waldorf's Grand Ballroom. The featured speaker on this occasion is to be Lowell B. Mason, Commissioner of the Federal Trade Commission. His understanding of business problems, and his sympathetic attitude toward efforts at solving them are understood to have made him a favored speaker before audiences such as he will have on this occasion.

Immediately following the luncheon, and open to all in the trade, whether or not they have attended the meal, a conference on trade practices is to be conducted by the NPTA. The subject for discussion will be a set of proposed trade practice rules that have been drawn up and discussed informally by local groups and associations. It is said they have won emphatic approval. They are to be submitted at this time for discussion, and the committee in charge of their promulgation expresses confidence that they will be adopted with few if any exceptions.

The convention is to be closed a day earlier than had been planned at first. There will be no sessions on Thursday, the 8th, owing to unexpected developments. The program will close with the annual meeting that is set for April 7 in the afternoon.

Giegengack Resigns

WASHINGTON—Augustus E. Giegengack, the public printer, resigned this week. President Truman accepted Mr. Giegengack's resignation effective March 15.

Mr. Truman wrote Mr. Giegengack of his "deep regret" at the loss of a man who has held the position thirteen and one-half years — longer than any other public printer.

Upson Raises Rank Of Two Officials

LOCKPORT, N. Y.—Announcement of two appointments to official positions with The Upson Company, manufacturers of wall and ceiling panels, has been made. Henry W. Schmidt, who has been secretary of Upson for the past several years, has been elected secretary-treasurer by the board of directors. James J. Upson, who has been associated with the company in various capacities following service as a U. S. naval officer, has been appointed assistant to the president by W. H. Upson, Jr., president.

Both men are graduates of Wharton School of Finance and Commerce at the University of Pennsylvania.

Mr. Schmidt is a member of the New Jersey Bar, having received his legal training at Harvard Law School and the New Jersey Law School. After engaging in the private practice of law in Elizabeth, N. J. for a short time, he specialized in labor law and was appointed to a staff position with the National Labor Relations Board, as trial examiner with headquarters in Washington, D. C. During the next few years, he conducted N.L.R.B. hearings involving 150 cases, many of national interest, in all sections of the United States, and brought about amicable settlement of many of the cases during the hearings.

He joined The Upson Company as assistant to the president, and later became secretary and now secretary-treasurer of the company.

Mr. Upson saw action during World War II in the Pacific theater of operations as a lieutenant (senior grade) in the U. S. Naval Reserve. He also saw duty in ships' service at the Charleston, S. Carolina Navy Yard, and on an L.S.T. as well as on one of the large transports. Previous to his graduation from Wharton School, he also attended Culver Military Academy and the University of Buffalo.

Robert Bringman Joins Nepco Technical Staff

PORT EDWARDS, Wis.—Robert Bringman has rejoined the technical department of Nekoosa-Edwards Paper company, as chemist. Prior to the war he worked in the Nekoosa-Edwards laboratory on beater control and pulp and paper testing. He left the company in September, 1942, to enter the University of Wisconsin, but was called to military service shortly thereafter.

After serving three years in the AAF as a navigator, Bringman was separated from the service and reentered the University of Wisconsin in the fall of 1945. He was graduated from that institution as a chemical engineer in February of 1948 and he returned to the Nekoosa-Edwards technical staff.

HARRY BENGTSSON

President of Benex Corp., who was elected president of the Untied States Paper Exporters Council, Inc., at its Sixth annual meeting. In assuming office, Mr. Bengtsson stated that in the face of export difficulties and restrictions of all kinds resulting from widespread maladjustments all over the world, the well-established American paper exporter will continue to fight for a permanent place for American papers in export markets.

The council also elected as its vice president, Kenneth W. Lathan, vice president of Moller & Rothe, Inc., and as its secretary-treasurer, George Johnson, secretary of Elof Hansson, Inc. Elected to the new board of directors in addition to the officers were Elwin Walker, treasurer of Walker, Goulard, Plehn Co., Inc. Frank W. Smith, vice president of Bulkley, Dunton Paper Co., S.A., Leon Bischoff, managing director of the Export Department of Marquardt & Co., and Fred C. Strype, Jr., secretary of Fred C. Strype, Inc., whose father was one of the founders of the council and recently celebrated his 50th year in the paper trade.

Wesley Cook Expands His Personnel Duties

NEENAH, Wis.—Wesley Cook, who left Neenah three years ago to be personnel superintendent of the Spruce Falls Power and Paper company and mill manager of the Kimberly-Clark of Canada plant at Kapuskasing, has been named coordinator of industrial relations for all Canadian operations. In his new capacity he will be a member of the K-C industrial relations department here.

Menominee Chamber Elects Don Rawson

MARINETTE, Wis.—Don C. Rawson, resident manager of the Marathon Paper company plant in Menominee, Mich., was elected president of the Menominee Chamber of Commerce February 26 at the organization's annual meeting at Hotel Menominee. He succeeds Hugh K. Cavill.

Bemis Names Davis To Head New Plant

ST. LOUIS, Mo.—H. C. Davis, who has headed the Bemis Bro. Bag company paper specialty plant in St. Louis during its brief period of growth, has been formally appointed manager of the plant. A graduate of the School of Business and Public Administration, University of Missouri, Mr. Davis joined the Bemis organization in 1942 in the Market Research Department. He was active there in research and the development of special types of bags for war use.

During World War II Bemis started the manufacture of special bags known as "case liners" which were used for the protection of supplies, such as cigarettes, shipped overseas for the armed forces. This began as a small department with Mr. Davis in charge, and under his direction grew into a full-sized plant operation during the war years.

When the time came for reconversion, this plant started making paper bags of irregular sizes and odd shapes for industries which previously had not been served by Bemis. These bags are made in sizes large enough for a full-sized mattress down to small broom covers, as well as specially designed case liners, paper bags and covers for a wide variety of products.

Appointment of Walter A. Kamp as sales manager of the paper specialty plant, has been made known. Mr. Kamp started with the Bemis organization in 1923 in the St. Louis waterproof department. He transferred to the Paper Specialty Plant, which was built to meet wartime needs for special shipping containers, in 1944 shortly after the plant began operations.

Brown Names Raeburn To Officer Status

Charles G. Raeburn, Manager of Financial Dept. of Brown Company, Berlin, N. H. and its Canadian subsidiary, Brown Corporation, La Tuque, P. Q., has been elected assistant treasurer and assistant secretary of the company and corporation.

Mr. Raeburn joined Brown Company in 1944 as Cost Engineer with the Woods Department. In addition to his work as cost engineer, he did special accounting work in the controller's department and installed the Woods Accounting System for Brown corporation. He was promoted to financial department manager the first of the year.

Mr. Raeburn has been engaged in financial work for nearly 20 years. He joined the Abitibi Power and Paper Company, Ltd. of Toronto, in 1929 as a woods accountant and was appointed chief woods accountant in 1935. In 1942 he went with the Treasury department of the Canadian government in the field of cost investigation for government financed companies.

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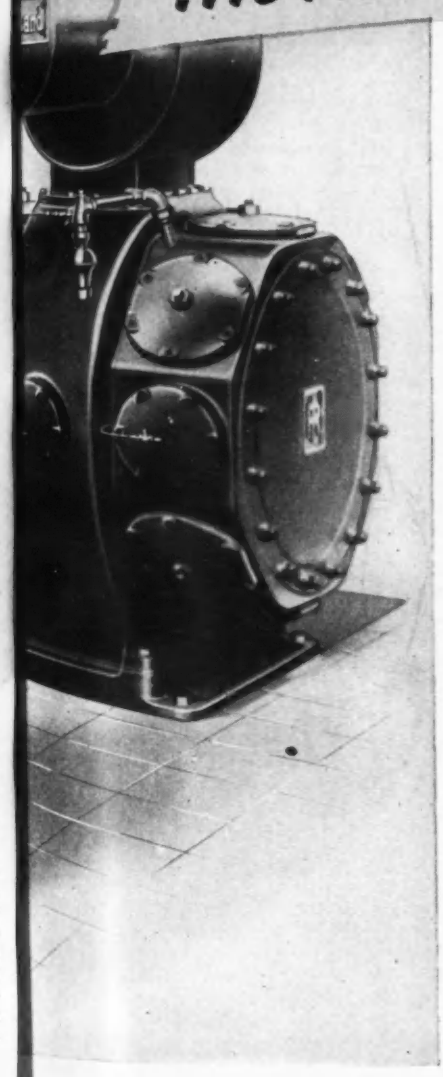

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Maritime Newsprint Project Is Revived

FREDERICTON, N. B. — Legislation providing for the incorporation of the proposed $65,000,000 Atkinson - Bagley newsprint project is to be sought at the forthcoming session of the New Brunswick Legislature, it is understood locally.

First broached before the Second World War and revived again last fall, the co-op promoters, E. C. Atkinson, Fredericton barrister and pulpwood operator, and Frederick C. Bagley, Sr., are seeking incorporation under the name of the Maritime Pulp and Paper Mills, Ltd.

Present plans call for the erection of a newsprint mill, to be finished in part by United States publishers and operated on a non-profit, cooperative basis, at tidewater on the Bay of Fundy. It will be a four-machine unit with an initial capacity of 750 tons of newsprint and 250 tons of kraft per day and an ultimate capacity of around 400,008 tons annually.

Financing for the project calls for a capitalization of $65 million of which $35 million is to be raised through subscription of 350,000 shares of capital stock at $100 a share by participating publishers and the remaining $30 million through a low interest long-term bond issue.

Each share of capital stock would represent a ton of newsprint and each publisher may invest $100 a ton on such tonnage as he may see fit to subscribe.

Sponsors of the project estimate an average cost of $65 a ton for newsprint delivered when the new mill is in operation.

Congress Calls for Bids On Paper Requirements

WASHINGTON, D. C.—Sealed proposals will be received until 10 a.m., March 15, 1948, in the room of the Joint Committee on Printing, in the Capitol, Washington, D. C., for furnishing the paper for the public printing and binding, and blank paper for the use of the Government departments and establishments in the District of Columbia, for the term of three months, beginning April 1, 1948; deliveries to be f.o.b. Government Printing Office Warehouse, or warehouse siding, Washington, D. C. The proposals will be opened in the presence of and the award of contracts made by the Joint Committee on Printing to the lowest and best bidders for the interest of the Government whose bids are in conformity with the requirements of the proposal. The Committee reserves the right to reject any or all bids, or to accept any bid or any part and reject the other part, if, in its opinion, such action would be in the interest of the Government.

Blank proposals containing the instructions, schedule, and specifications, accompanied by standard samples, may be obtained by addressing A. E. Giegengack, Public Printer, Washington, D. C.

Dryden Plans Moves To Make More Paper

TORONTO, Ont.—Dryden Paper Company has decided to move its paper bag manufacturing division from Dryden, Ont., to Winnipeg, Man., according to report. Vice-President and Managing Director E. Lorne Goodall is reported to have stated that the directors felt that the company would profit most by concentrating on paper and pulp manufacture at Dryden.

According to the report, a new company is to be formed to take over the manufacturing of paper and Dryden Paper will have a large interest in the company. The new paper machine will raise capacity of the Dryden plant to 80 tons per day and pulp production is to be raised from 140 to 150 tons per day.

In a report covering the four-month period ending Jan. 31, 1948 Dryden Paper Company reports earnings of and taxes. This compares with $341,-$490,185 before depreciation, depletion 063 for the same period a year ago or an increase of approximately 43 percent, the company states. Increased production from the new paper machine plus more favorable prices on market pulp in United States largely accounts for the improvements in earnings, it is stated.

Manufacturers Agents Will Meet April 6

NEW YORK — The Association of Manufacturers Agents of the Paper Industry will meet for luncheon Tuesday, April 6, in the Glass Hat at the Belmont Plaza Hotel, to discuss the problems of the association. After the luncheon a meeting of the members will be held at the Association headquarters in the hotel to elect a board of directors for the ensuing year, and to transact such other business as may come before them. The board of directors will then meet for the election of officers.

Nepco Extends Program Of Help for Home Builders

PORT EDWARDS, Wis.—Nekoosa Edwards Paper company had extended through 1948 its program of encouraging home ownership through the awarding of cash grants of $300 to employes building homes for their own use in Nekoosa and Port Edwards. The program was started in July, 1946. In addition to cash grants, the purchasing department of the company helps employes in securing necessary building materials.

Three-Day Fire Burns Northern Mill's Wood

GREEN BAY, Wis.— Loss of $200,000 was caused by a fire which broke out February 29 at the Northern Paper Mills. The fire was not brought under full control until March 2. A. B. Hansen, president and general manager, declared that the loss was covered by insurance. Mill operations were not interrupted, the paper machines running continuously.

The city fire department and brigades from the Hoberg Paper Mill, as well as from the Northern Paper Mills battled the flames, which broke out about midnight February 28.

A ditch was dug by the city street department to drain away water from in front of the mill and office entrance, and pumps were also used for this purpose. Trucks "ferried" workers to and from the mill.

The wood destroyed Mr. Hansen said, was pealed black spruce, the best pulpwood obtainable, and was worth about $38 a cord at present prices.

While the machine floors were above water March 1, the pits into which freight cars are run to bring their floors level with the mill floor were full of water, preventing loading or unloading of freight.

The blaze was discovered by a watchman, who said everything had been all right on his last round a few minutes before. About four million gallons of water were poured on the fire February 29.

For a time, the situation looked grave. The wind had freshened, and it was very doubtful that firemen could confine the blaze to one stack. A constant shower of embers fell over other piles, immediately behind the mill's general office building. Firemen with hoses climbed to the top of two steam cranes to pour water into the flames from above. Flames leaped 50 feet or more into the air and were visible from much of the city. Smoke was so dense around St. Vincent hospital that rooms were filled, resulting in a call for the firemen to determine its source.

Support Prices Set for Naval Stores Program

WASHINGTON — A price supporting loan program for gum naval stores for 1948 was promulgated last week by the Agriculture Department. The support price will be 90 percent of February 1 parity, or $131.58 for 50 gallons of turpentine and 1,400 pounds of K-grade rosin, the gum naval stores production unit.

The initial loan rates on turpentine and rosin, effective from April 1, 1948 to July 1, 1948 are 64½ cents per gallon bulk, on turpentine, and $7.09 per 100 pounds net, on K-grade rosin packed in standard metal drums. Appropriate differentials will apply on other grades of rosin, but no loan will be made on rosin below grade G.

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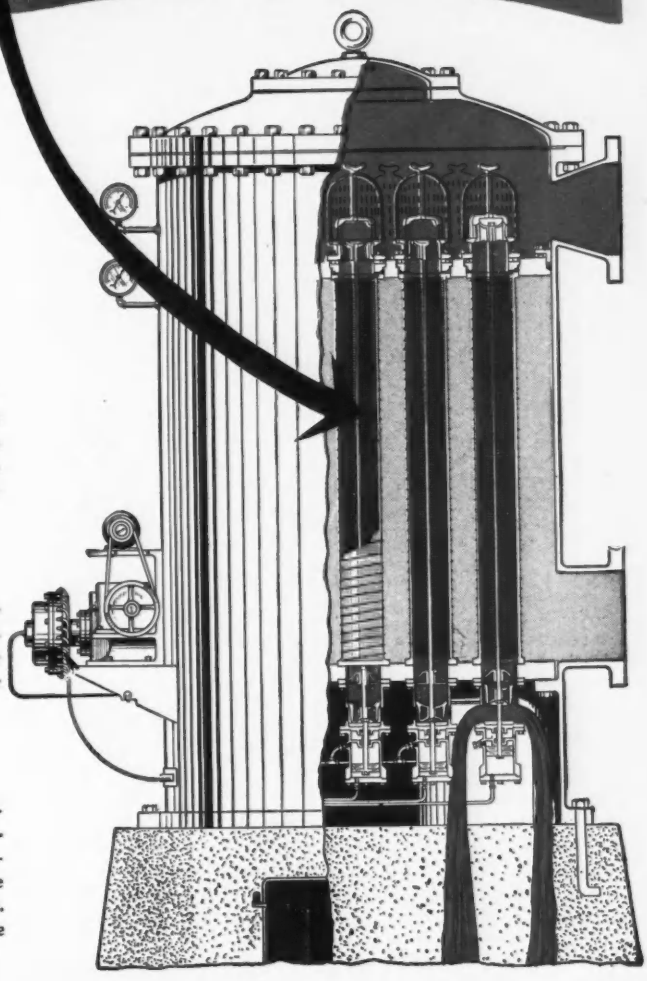

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PORO-STONE Filters provide effective filtration for water required in high grade paper stock. Installed following sand filter equipment, the PORO-STONE Filter eliminates finest sand, pipe scale and all foreign matter which might impair paper quality.

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ADAMS Filters (both PORO-SCREEN and PORO-STONE) are designed for continuous, automatic operation. No moving clearances to pass foreign material—no shut-downs required by back-wash cleaning—very little attention needed. *Constant filtration assured at all times.* Built in several sizes to meet your requirements. Write for Bulletin 901.

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ADAMS PORO-STONE AND PORO SCREEN **FILTERS**

FINANCE

Eddy Shows Earnings To Be A Third Higher

TORONTO, Ont.—Net earnings of E. B. Eddy Company for 1947 are reported at $575,783, equal to $1.92 a share, compared with $446,825 or $1.49 a share for 1946. All the company's outstanding shares (except directors' qualifying shares) are owned by Eddy Paper Company, an investment and holding company. For 1947, operating profits of the Eddy Company were increased to $2,080,320 from $1,376,607 in 1946, while depreciations was raised to $891,449 from $553,638, bond interest to $140,000 from $71,232 and taxes on income to $473,000 from $304,912 in 1946.

The sudden withdrawal of support for Dominion government bonds by the Bank of Canada last week (the second time this step has been taken) had at least one direct repercussion in the corporate new issue market. That was on the new E. B. Eddy Company $3 million Series B bond issue.

The new issue was being offered as 3¾ percent bonds at $100 and accrued interest, last week. This week the coupon rate was changed to 4 percent. The bonds are dated December 15, 1947, and are due June 15, 1966, and are being offered by Wood, Gundy & Company.

Proceeds of the new issue will be applied to capital expenditures exceeding $4.2 millions incurred and to be incurred for new equipment, additions and improvements at its Ottawa and Hull plants. The expenditures are expected to result in substantial returns of revenue, President G. Gale states in the prospectus. The balance required will be provided from the general funds of the company.

Capitalization, outstanding on completion of financing, will be $4 million 3½ percent Series A bonds and $3 millions 4 percent Series B bonds, each due June 15, 1966, and 300,000 common shares, par $100.

The prospectus shows a balance available for bond interest of $1,188,783 for 1947 ($822,969 for 1946). Interest requirements on the bonds will total $260,000 a year.

Total production of the E. B. Eddy company in 1947 included 46,298 tons specialty papers, 43,146 tons of newsprint, 26,144 tons board, 10,017 tons toilet, serviettes and toweling and 7,057 tons hanging paper.

Barber-Ellis Earnings Improve Moderately

TORONTO—Barber-Ellis of Canada, Ltd., reports consolidated net earnings for the year ending December 31, 1947, of $175,404, equal after preferred dividends to $3.87 a share on the common stock. This is a moderate improvement over net earnings of $163,116 or $3.61 a share for the year 1946. Earnings from operations of $399,731 were up from $356,668, while the reserve for income and excess profits taxes was increased to $210,000 from $175,000 for 1946. Liquid position is better, with net working capital of $938,556 at December 3, 1947, comparing with $797,884 at the end of 1946.

St. Regis Sets Record For Sales and Profit

NEW YORK—The annual report of St. Regis Paper Company and subsidiaries for the year ended December 31, 1947 shows net income at a new peak of $14,631,325 equal, after preferred dividends, to $2.66 a share on the common stock outstanding. This compares with $5,563,603, equal to 99 cents a share on the common stock, in the preceding year.

In a year of substantial achievements by the company, net sales mounted to a record $143,864,583, against $82,782,186 for 1946 and total assets rose to $132,643,598 from $99,170,468. Net working capital, including marketable securities at market value, at the end of 1947 is shown at $43,361,411 compared with $35,918,143 at the end of the preceding year.

Highlights of the past year in the affairs of the company included near completion at Pensacola, Fla., of the world's largest integrated operation of timber to pulp to kraft paper to multiwall bags; a start in the construction of a $6 million kraft paper mill at Tacoma, Wash., and the acquisition of important new timber resources in Georgia and Maine, which raised to over 1,800,000 acres the total woodlands now controlled by St. Regis.

The timber holdings, the report states, constitute the greatest single factor of insurance of continuous operations and adds that the company continues to advance its program of growing what it uses and protecting what it grows to assure a long-term supply of pulpwood.

In his report to stockholders, Roy K. Ferguson, president, points out that during 1947 important progress was

(Continued on page 20)

FINANCIAL RECORD OF THE WEEK

New York Stock Exchange

High, Low and Last for Week Ending March 6, 1948

STOCK	High	Low	Last
A. P. W.	4½	4⅛	4⅛
Armstrong Cork Co.	47¼	46¾	47¼
Armstrong Cork Co., 4 pf. 4	107	104⅝	107
Armstrong Cork Co., pf., 3¾	92¼	91	92¼
Celotex Corp.	24	23	23½
Celotex Corp., pf.	....	....	....
Certain-Teed Products Corp.	14½	13¾	14¼
Certain-Teed Products Corp., pf.	....	....	....
Champion Paper & Fibre Co.	20	20	20
Champion Paper & Fibre Co., pf.	95	93	94¼
Congoleum Nairn Co.	31½	30½	31
Container Corp. of America	37½	35¾	36¼
Container Corp. of America, pf.	....	....	....
Crown Zellerbach Co.	29⅞	28⅝	29⅝
Crown Zellerbach Co., pf. 4.20	94	93½	94
Crown Zellerbach Co., 4 pf. 4	110⅞	107¼	110¼
Dixie Cup Co.	34	33	33¼
Dixie Cup Co., A	48½	47½	47½
Flintkote Co.	34¼	32¾	32¾
Flintkote Co., pf.	....	....	....
Robert Gair	8¼	8	8¼
Robert Gair, pf.	19	19	19
International Paper Co.	45¾	44	44⅞
International Paper Co., pf.	89½	87	89½
Johns-Manville Corp.	36⅞	35⅞	36⅝
Johns-Manville Corp., pf.	105	103	105
Kimberly-Clark Corp.	21	20¾	21
Kimberly-Clark Corp., pf.	96	93¾	94¼
Mac Andrews & Forbes	36¾	36½	36½
Mac Andrews & Forbes, pf.	142	142	142
Marathon Corp.	19⅜	19⅛	19⅛
Mead Corp.	17¾	16¾	17¾
Mead Corp., pf., 4¼	86½	86	86
Mead Corp., pf. 2	39	37	38
National Container Corp.	12¼	11¾	12⅛
Paraffine Companies, Inc.	24¼	22⅝	24⅛
Rayonier, Inc.	24⅜	23¾	24⅛
Rayonier, Inc., pf.	32	32	32
Ruberoid Co.	58½	57	58½
St. Regis Paper Co.	8⅞	8½	8¾
St. Regis Paper Co., pf.	81	81	81
Scott Paper Co.	40½	40	40½
Scott Paper Co., pf.	90¾	90¾	90¾
Sutherland Paper Co.	39	39	39
Union Bag & Paper Corp.	29⅞	28¼	28½
United Board & Carton	12½	12½	12½
U. S. Gypsum Co.	98¼	97	97
U. S. Gypsum Co., pf.	....	....	....
United Wallpaper	4⅝	4⅜	4½
United Wallpaper, pf.	....	....	....
West Virginia Pulp & Paper Co.	39¼	39	39
West Virginia Pulp & Paper Co., pf.	103½	102½	103½

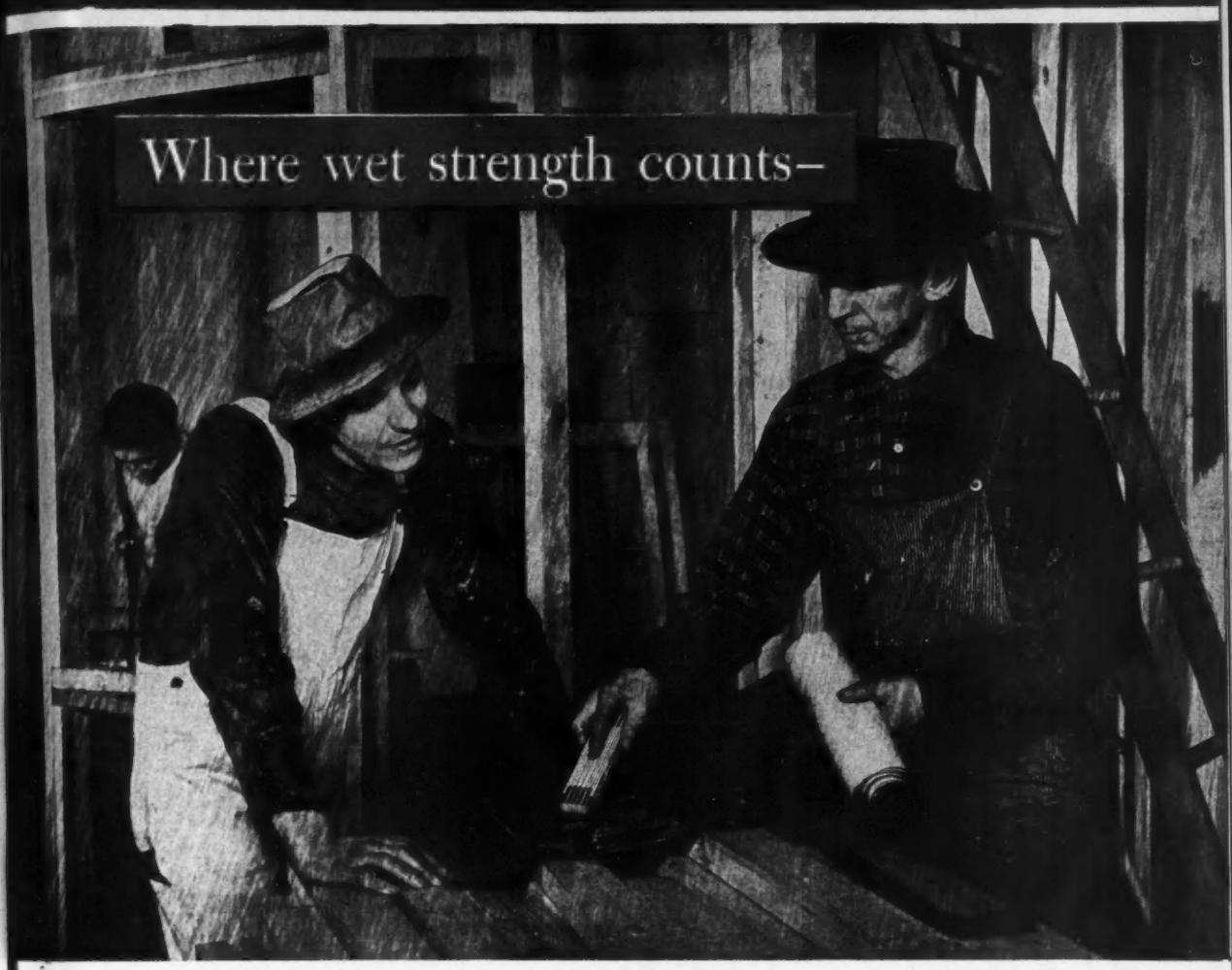
BONDS

Celotex Corp., 3¼s '60	....	....	....
Certain-Teed Products Corp., 5½s '53	....	....	....
Champion Paper & Fibre Co., 3s '65	....	....	....
Mead Corp., 3s '68	....	....	....

New York Curb Exchange

High, Low and Last for Week Ending March 6, 1948

STOCK	High	Low	Last
Great Northern Paper Co.	40	38½	38½
Taggart Corp.	10⅞	10¾	10⅞



count on UFORMITES 467 and 470 for outstanding results at low cost

For durable blueprints, as in many other applications, the paper used must have superior wet strength. That's why so many firms rely on the UFORMITES . . . because they know that these urea formaldehyde resins impart that wet strength efficiently and economically.

UFORMITE 467 is especially adapted for use with Kraft by beater addition in the manufacture of bag and wrapping paper, toweling, food wrapping materials and map paper. UFORMITE 470 is particularly well suited for sulfite, rag and groundwood stocks, for the production of high wet strength glassine, sulfite wrapping paper, absorbent tissues, chart and ledger paper.

Here are some of the other advantages of the UFORMITES: they *do not* affect the color, odor or taste of paper; they *do not* require special equipment or special handling; as little as 1% resin on dry fibre weight *will* increase wet strength as much as 300%; they *do* improve dry tensile and Mullen, fold, uniformity of sizing and coating surface characteristics.

There's no doubt that the UFORMITES can increase the worth of your paper . . . at low cost. You'll find that it will pay you to get full information on these dependable wet strength resins.

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Represented by Cia. Rohm y Haas, S.R.L., Carlos Pellegrini 331, Buenos Aires, Argentina, and agents in principal South American cities.

THE RESINOUS PRODUCTS & CHEMICAL COMPANY

WASHINGTON SQUARE, PHILADELPHIA 5, PA.

Continental Doubled Its Net in 1947

NEW YORK — Continental Can Company, Inc., and wholly owned subsidiaries this week reported consolidated net income for the calendar year 1947 at $12,809,543 which, after dividends on the $3.75 cumulative preferred stock, was equivalent to $3.88 a share on 3,157,781 common shares outstanding. This compares with net income in 1946 of $6,162,944 or $1.96 a share after preferred dividends, on 2,862,431 common shares outstanding at December 31, 1946. Before providing for income taxes, 1947 income amounted to $20,559,543 compared with $9,762,944 in 1946. Sales and operating revenues for the year were $266,431,629 as compared with $212,924,315 in 1946.

The balance sheet as of December 31, 1947, showed current assets of $104,306,746 and current liabilities of $27,733,896, an excess of $76,572,850 in current assets over current liabilities.

In his annual report to stockholders, Hans A. Eggerss, president, said: "A part of the increase in dollar sales for the year resulted from increased prices. In the case of metal cans, prices were advanced an average of about 17 percent at the beginning of the year—the first general increase in metal can prices in about 10 years. Approximately half of this additional income was needed to offset the increased price of tin plate and other steel products from which metal cans are manufactured. Increases in labor and other costs were, in part, covered by the remaining portion of the price advance.

"Due to the restrictions applying during the war, the company was unable to carry forward its expansion program, including the erection of new plants and the modernization of operating facilities, except to a limited extent. This necessarily has resulted in particularly heavy expenditures for this purpose since the war, the total amount expended in 1946 having been about $13,500,000 and in 1947, approximately $14,500,000. Such expenditures are expected to continue to be above normal at least for the next two years in order to meet the growing demand from our customers and to maintain our competitive position. We assure you that not one dollar will be spent at today's high prices unless we can foresee an adequate return, within a reasonable period, on the money to be spent. In line with these thoughts, we believe that it is sound judgment to finance this program to the maximum extent possible from earnings."

Mr. Eggerss pointed out that a new plant for the manufacture of paper and fibre containers had been completed at Utica, N. Y., and that new plants were under construction at Portland, Ore., and at North Tonawanda, N. Y., the former to be used for the manufacture of metal cans and the latter for fibre drums. In addition, a plant at Hayward, Cal., was purchased in January, 1948, to provide increased facilities for repairing and rebuilding machinery leased to customers for closing metal cans.

Mr. Eggerss also said that the company had every reason to believe that sales of its products would continue at a high level in 1948, provided canners have favorable crop conditions and raw materials are freely available to meet company needs.

"Government restrictions applying to the use of tin in cans were amended, effective February 29, 1948, to limit the over-all consumption in 1948 of tin for tin plate coatings to that contained in the tin plate received by each can manufacturer in 1947," he said. "In addition, the order, as amended, further restricts the industry by eliminating the use of tin for one type of product entirely and curtailing the over-all production on two other items through very limited allotments of tin for coatings of plate to be used in the manufacture of these two items. If continued throughout the year, the principal effect of these controls will be to hold down the company's volume of business in metal cans."

G. LAMONT BIDWELL
who has been made manager of Riegel Paper Company's Milford, N. J., Mill.

Waterproof-Ohio Plans Warehouse Addition

COLUMBUS, Ohio — A construction program involving the erection of a two-story concrete block office and warehouse building at a cost of more than $65,000 has been started at the plant of the Waterproof-Ohio Paper Company, 780 Frebis Ave.

The new building, according to Ben F. Lacy, vice-president, will be located on the north side of Frebis Ave. It will provide the company with 5000 additional square feet of warehouse space on the first floor and house the company offices on the second.

Contractor for the addition has set completion date for the project by next September.

Rayonier Reports Sales and Net Up

NEW YORK—Rayonier Incorporated, producer of highly purified wood cellulose, shows a substantial improvement in dollar sales and earnings for the year ended December 31, 1947, according to its published annual report to stockholders. Sales amounted to $49,964,041, compared with $24,311,957 for the previous eight-month period reported, the short period being due to a change in the fiscal year during 1946.

Net income after all charges, including Federal income taxes of $5,325,000, amounted to $8,505,916 for the year which, after payment of $1,252,410 of preferred dividends, represented earnings of $7.30 per share on the common stock. This compares with $2,500,944 or $1.68 per share, for the preceding eight-month period.

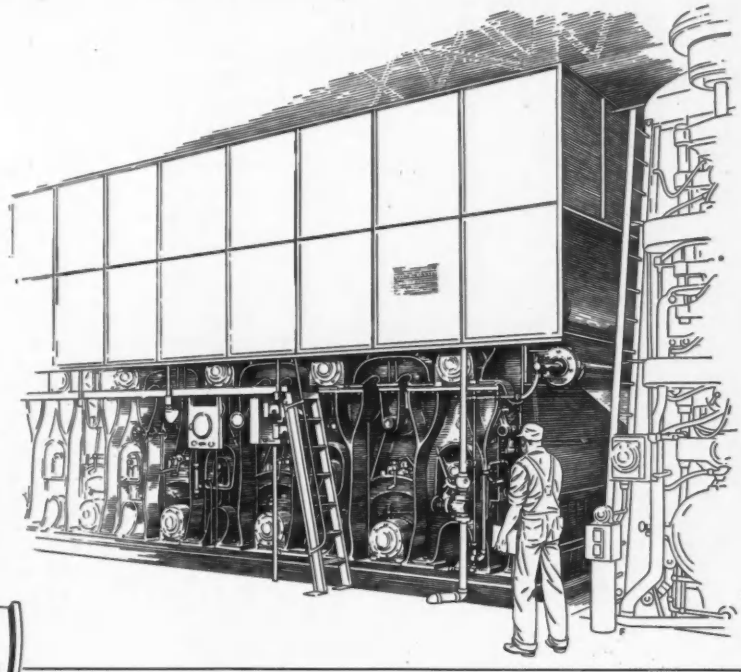
Dividends on the common stock were resumed in October, 1947, after a lapse since 1943, by the payment of fifty cents a share for the last half of the year. In February, 1948, the common stock was placed on a regular quarterly basis with a dividend of 25 cents.

In his letter to stockholders, President Edward Bartsch states that the most significant development during the year was the acquisition of a controlling interest in the Polson Logging Company which owns extensive forest properties in the State of Washington. He points out that wood is the principal raw material entering into Rayonier's products, and states that these forests, together with Rayonier's other large forest holdings, will assure sufficient wood for the continued operation of the company's three Northwest mills for many years.

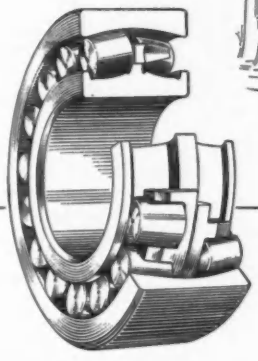
The consolidated balance sheet as of December 31, 1947, shows current assets of $22,746,876, and current liabilities of $6,265,875, a ratio of 3.63.

R. L. KERRIDGE
made manager of Riegel Mills at Warren Glen, Hughesville and Riegelsville, N. J.

Get Longer Felt Life With Torrington Spherical Roller Bearings



Sensitive operation of Torrington Spherical Roller Bearings on dryer felt rolls of the Pusey & Jones paper machine reduces drag, prolongs felt life and saves power.



. . . uniform tension control possible with this new Torrington Bearing is important feature to Paper Industry.

REDUCED DRAG on dryer felt rolls is obtained when Torrington Spherical Roller Bearings are used. They provide uniform tension; hence longer felt life. Power consumption is reduced...service life extended because of the low coefficient of friction and high radial and thrust capacity. In addition, their design allows utilization of full shaft cross-section for greater strength. Shaft deflection is smoothly accommodated by the self-aligning feature. Positive sealing eliminates danger of spoilage of web through oil leakage.

These and many related advantages can be secured on calender rolls, presses and paper dryers, chippers, beaters, Jordan engines and screens through the use of Torrington Spherical Roller Bearings.

The specialized experience of Torrington's engineers is offered you to aid in the design, selection and application of all types of anti-friction bearings. Call or write the nearest Torrington office.

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SPHERICAL ROLLER
TAPERED ROLLER
STRAIGHT ROLLER
NEEDLE
BALL
NEEDLE ROLLERS

Gurley Contract Sets Ten Cent Pay Raise

TROY, N. Y.—Officials of W. and L. E. Gurley have signed a new wage and working agreement with labor representatives under which employes will receive a straight increase of ten cents hourly. The new contract is effective for a year and about 175 workers are benefited. The agreement provides for adjustment to eliminate inequalities on certain jobs on which workers are employed. Another provision is that time and a half be paid for Saturday morning in the event of excused absences. Special provision is also made for paid vacation periods for all employes. Among those participating in the negotiations were William Saul, firm negotiator; C. E. Smart, works manager; Robert Kapps, Sr., production manager, and Albert E. Chernet, James S. Bulson, Sherwood Collins, Paul Taber, Walter Robinson, Wesley Heusser, representative of the labor organization. The firm manufactures papermakers' instruments.

New Huyck Contract Ups Pay 15 Cents

RENSSELAER, N. Y.—Representatives of F. C. Huyck & Sons have reached an agreement with labor organizers under which the employes will receive an hourly increase in wages of fifteen cents, effective February 15. An official of the labor organization stated that the new wage agreement would mean an additional quarter of a million dollars yearly to be spread among the earnings of the several hundred employes.

The contract also provides for continuance of six paid holidays and one, two, three and four weeks of vacations, depending on the lengths of service. A liberalized employe benefit plan was adopted by the firm on January 1. The plan includes sick benefits of half pay as high as $28.25 a week for as much as a year of illness death benefits and hospital and medical benefits.

The company was represented at the conferences by Earl D. Rhodes, general superintendent, and W. Stowell Wooster, director of manufacturing and a member of the board of directors. Among the labor negotiators were Philip Salem, Louis Rubino, Daniel Foley, Gregory Riley, James Greenshields and Paul Feeley.

Trustees Tells Kimberly How Paper Mill Helps

KIMBERLY, Wis. — Trustee Henry Melcher told a recent village board meeting that Kimberly-Clark Corporation is paying 80 percent of the cost for the new water softener plant in the village, from which the corporation will derive benefits. He also cited many other instances where the company bears the greater part of the cost for the community. Some residents, he said, failed to appreciate the part that K-C plays in the community.

The village board, at the same meeting heard Melcher say that should an emergency arise, such as a fire, in the event of an electric power outage, a call should be placed to Kimberly Clark Corporation asking it to sound a fire alarm. The village recently has been without power for hours on several occasions, and has approached the public utility which supplies the power, in an effort to assure more satisfactory service.

Upson Promotes Two To Larger Territory

LOCKPORT, N. Y.—Appointments of two new district sales managers for The Upson Company, have been confirmed by Harry R. Shedd, vice-president and director of sales.

Charles G. Ostertag has been named as sales manager for the central division of the company with headquarters in Atlanta, Ga. He just became associated with Upson after attending Syracuse University. For about 23 years he was engaged in territorial development work throughout the South. During World War II, he was assigned to the Baltimore-Washington territory as the company's special Washington representative. He has had wide merchandising experience particularly in the application of the company's products.

George A. Engel has been appointed western division sales manager with headquarters in Kansas City, Mo. He has been sales representative for the company in the Denver area for the past seven years. During that time, he has developed extensive new markets in Utah, New Mexico, Wyoming and Nebraska.

GEORGE A. ENGEL
Western Division Sales Manager
The Upson Company

Nat'l Paper Products Opens Foreman School

CARTHAGE, N. Y.—A special instructor training course for employes of the National Paper Products Company plant has completed its third week with 49 men having been enrolled to date, Raymond F. Schadt, resident manager of the plant, announced.

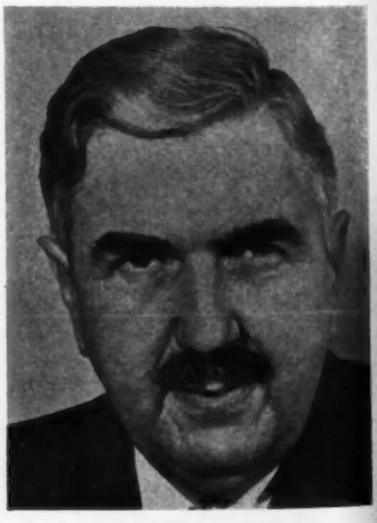
The course was taught for the first two weeks by representatives of the Training Within Industry foundation, a privately-sponsored organization, and is now being carried on by Harold F. Carpenter, assistant manager, and Ivan E. Nicholl, plant superintendent.

The foundation which initiated the course is an outgrowth of a wartime organization which carried on instructor training in defense plants in an effort to maintain adequate continuity of instruction in the face of acute shortages of trained personnel.

The course now being taught in the Carthage plant is general rather than specific, being designed to instruct officials, supervisors, foremen and machine operators of any plant how to teach their jobs effectively to less experienced employes.

Consisting of ten hours of lectures and demonstration divided into five two-hour periods, the course was begun in the National Paper plant on Feb. 1 and was continued for three sessions, the first two taught by foundation men and the last by the local officials.

It is hoped that supervisory employes completing the course will be better equipped to train the men serving under them and that others may be able, as a result of it, to turn over their jobs to new workers with less loss of efficiency due to poor initial training.



CHARLES A. OSTERTAG
Central Division Sales Manager
The Upson Company

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RECEIVING • PROCESSING • STORAGE • DISTRIBUTION

St. Regis Sets Record On Sales and Profits

(Continued from page 14)

made in the direction of effectively consolidating into the company's operations the numerous newly-acquired properties. He adds:

"A company-wide program of identification, product improvement, introduction of standardized operating practices and adoption of centralized controls of purchases, production and shipments is contributing to increased efficiency in all divisions."

Commenting on the progress made in the company's long-term program of expansion and modernization, Mr. Ferguson states:

"We have now reached a new point of integration of timberlands, pulp mills, paper mills and converting plants which has been an important objective in planning the expansion program. Our products and markets are more diversified and we are continuing the development of new paper and plastic products. Multiwall bags for old and new customers are being produced in larger volume in our own factories from kraft paper of our own manufacture. All these factors are contributing to a greatly strengthened economic position for St. Regis."

The report points out that at the close of the period under review the Printing, Publication and Converting Paper Division was producing a wider range of paper grades than heretofore, with all mills and machines operating at capacity under the influence of a continued high demand. To a large extent, the report adds, the activities of this division during 1947 have been devoted to improving the operation and increasing the output of 1946 property acquisitions.

After reviewing the accomplishments of the company in its Packaging Division, the report states: "With more paper available in 1948 and with a new, large bag plant, the company's twelfth, coming into production at Pensacola, Florida, adjacent to the new Alabama Pulp and Paper Company mill, and the proposed bag plant at Tacoma, further progress will be made possible. The added production is being provided to meet the requirements of new markets, especially in the feed and chemical industries, together with the larger demands of present customers."

There are now more than 4,000 St. Regis packers operating in plants in the United States and 315 in Canada, the report states, after pointing out that annual installations in the United States have increased from 145 bag-filling machines in 1944 to 456 in 1946 and 585 in 1947.

Sales of the Panelyte Plastic Division in 1947 exceeded those in 1946 by a substantial margin, the report states, adding that 1948 is expected to show a further gain. It is pointed out that the increased productive capacity resulting from the $2,000,000 expansion expenditures at the Trenton plant in 1946 and 1947 did not become fully available until October, 1947. Production in 1948, the report suggests, should reflect the full benefits of these improvements.

The report stresses that St. Regis has placed increased emphasis on company-wide research. The program includes research in raw materials, manufacturing methods, finished products, customer requirements and the availability of potential markets.

Brooks Bank Note Promotes Sanger

SPRINGFIELD, Mass. — Allison R. Sanger was promoted to the position of vice-president of Brooks Bank Note Company, and reappointed general manager, at the annual meeting of the company held March 1.

Joshua L. Brooks was reelected president and J. Loring Brooks, Jr., was advanced from assistant treasurer to treasurer, and reelected executive vice-president. Miss Jane H. Alden was elected assistant treasurer and reappointed credit manager.

In his report to the stockholders and directors, J. Loring Brooks, Jr., disclosed that the company had produced the greatest volume in its history during 1947, and that a substantial current backlog of unfilled orders insures a high level of production for the first half of 1948.

Mr. Sanger has been employed by Brooks Bank Note for 19 years. In 1929 he became cost accountant and in 1930, an estimator. He was promoted to the position of purchasing agent in 1932. In 1939 he became factory manager and in 1941 was appointed general manager. He was president of the Western Massachusetts Purchasing Agents' Association in 1942 and 1943, and has been a director of that association for several years. He is also a director of the Advertising Club of Springfield.

Miss Alden has been employed by the company for 21 years in the capacity of accountant. She has recently been serving as credit manager. In assuming the office of assistant treasurer, she will retain her other responsibilities.

Canadian Boxes Names Barker to Succeed Forster

VANCOUVER, B.C.—Paul E. Cooper, president of Pacific Mills Limited and its subsidiary company, Canadian Boxes Limited, has appointed W. L. Barker as sales manager of the latter concern, succeeding the late C. H. Forster. Simultaneously, Mr. Cooper made known that D. C. Vivian assumes the post of assistant sales manager.

Mr. Barker has been with the organization since 1938 and served four years with the R.C.A.F. Mr. Vivian became associated with Canadian Boxes Limited on receiving his discharge from the R.C.A.F. in 1945.

Wilkins Elected by Waterproof Group

NEW YORK—George C. Wilkins of Specialty Converters, Inc., East Braintree, Mass. and South Windham, Me., was unanimously elected President of the Waterproof Paper Manufacturers Association at its annual meeting. He succeeds Guy E. McCorison of Thilmany Pulp and Paper Company, who had completed two years of service to the association as its President.

Frank Hall of the Chase Bag Company, Chicago, was unanimously elected Vice-President of the Association, and Philip O. Deitsch, Administrative Officer of the group, was again designated as the executive head of the Association for his seventh consecutive term.

Other members of the Board elected at the Annual Meeting were: H. A. Anderson, The Sisalkraft Company; Claude N. Campbell, National Waterproofing Co.; James F. Doyle, Arkell Safety Bag Company; Stephen A. Feely, Keystone Roofing Manufacturing Co.; J. D. Johnston, W. Ralston & Company, Inc.; G. E. McCorison, Thilmany Pulp and Paper Co.; A. J. Thiel, Angier Corporation.

Among the highlights of the annual meeting was a report of the Industry tests on building papers of the industry that had recently been completed at Pennsylvania State College. These tests were conducted under the joint auspices of the Federal Housing Administration, the National Housing Authority, and The Waterproof Paper Manufacturers Association.

In his Annual Report to the Industry, President McCorison stressed the need for the adoption of an educational program on the part of the waterproof paper industry. This phase of his report was again taken up in more complete detail by Administrative Officer Deitsch in his annual recommendations to the Industry.

The convention went on record as unanimously approving the recommendation of the reports of the two officers mentioned, and a committee is to be appointed in the near future to be designated as the Association's Educational Committee.

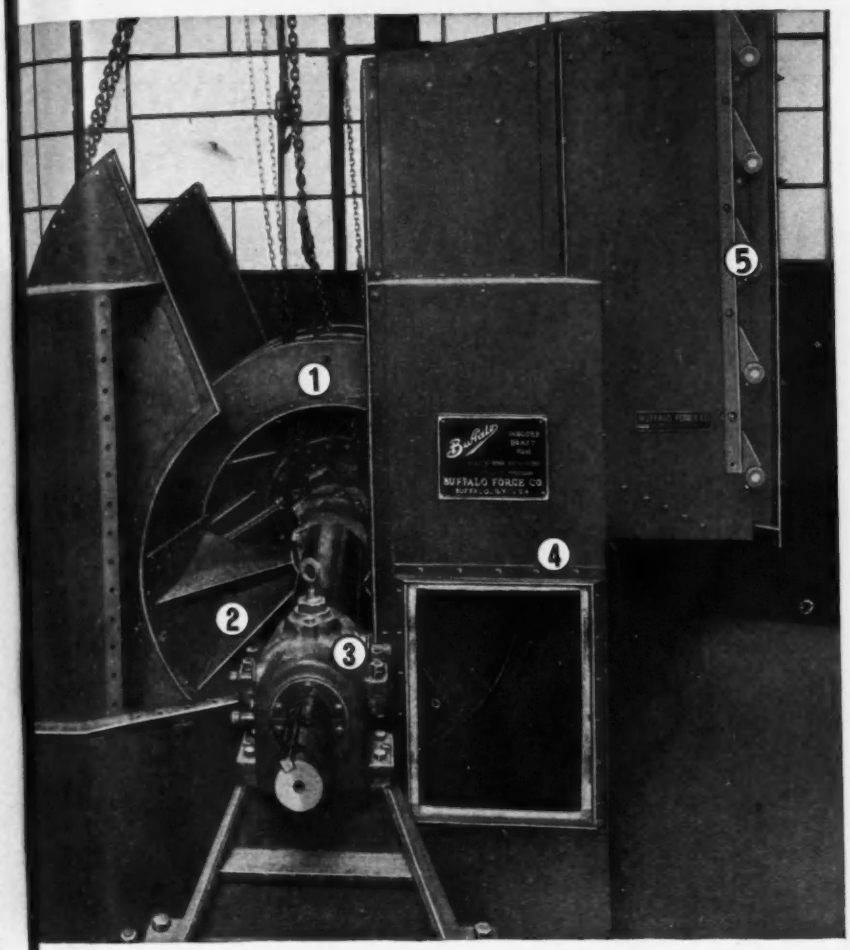
The assignment to be given the new committee was outlined by Deitsch in his Annual Report as follows:

"1. To study ways and means of educating the consumer of our product into its proper application and use.

"2. To authorize such committee to set up a series of recommendations to be presented to the Industry along the above indicated lines and to cover in such recommendations a suggestion of product identity as may be practical in the interest of achieving the aforestated ends of our Association's Educational Campaign.

"3. To recommend the establishment and creation of such funds thru prorata assessment as are indicated and necessary to effectuate the purposes of the over-all program."

AIR EQUIPMENT TO HELP YOUR BUSINESS



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- ★ BLOWING
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CUTTING AIR COSTS IN EVERY BRANCH OF INDUSTRY

IMPORTS

NEW YORK IMPORTS

WEEK ENDING MARCH 6, 1948

SUMMARY

Newsprint	3289 rolls, 98 pkgs.
Wrapping Paper	330 rolls
Sulphite Paper	2082 rolls
Filter Paper	39 cs., 5 pkgs.
Litho Paper	10 cs.
Wallpaper	7 pkgs.
Paperhangings	23 bls., 6 cs.
Parchment Paper	1 cs.
Printing Paper	480 rolls
Drawing Paper	6 cs.
Photo Paper	107 cs.
Box Board	114 rolls
Miscellaneous Paper	252 rolls, 30 pkgs.

NEWSPRINT

Madden Reeve Angel & Co., Winfield S. Stratton, Kotka, 3138 rolls, 98 pkgs.

New York Trust Co., Westerdam, Rotterdam, 151 rolls.

WRAPPING PAPER

National City Bank, Stockholm, Gothenburg, 156 rolls.

Green Kriegsman Paper Co., Stockholm, Gothenburg, 174 rolls.

SULPHITE PAPER

Phillips Paper Products, Inc., Stockholm, Gothenburg, 2082 rolls.

FILTER PAPER

E. H. Sargent & Co., Stockholm, Gothenburg, 14 cs.

J. E. Bernard & Co., Stockholm, Gothenburg, 5 pkgs.

H. Reeve Angel & Co., Inc., Titan, London, 25 cs.

LITHO PAPER

Sun Chemical Corp., Pioneer, Hong Kong, 10 cs.

WALLPAPER

J. L. Hecht & Co., Midland Victory, Rotterdam, 4 pkgs. (hand painted).

Import Trade Service, Midland Victory, Rotterdam, 3 pkgs. (hand painted).

PAPERHANGINGS

W. H. S. Lloyd & Co., Titan, London, 23 bls., 6 cs.

PARCHMENT PAPER

F. C. Strype, Midland Victory, Antwerp, 1 cs.

PRINTING PAPER

Jay Madden Corp., Winfield S. Stratton, Kotka, 480 rolls.

DRAWING PAPER

H. Reeve Angel & Co., Inc., Titan, London, 3 cs.

Stevens Nelson Paper Corp., Titan, London, 3 cs.

PHOTO PAPER

Lep Transport, Inc., Titan, London, 102 cs. (base paper).

Karr Ellis & Co., Titan, London, 5 cs.

BOX BOARD

Jay Madden Corp., Winfield S. Stratton, Kotka, 114 rolls (folding).

MISCELLANEOUS PAPER

Resolute Paper Products Corp., Stockholm, Gothenburg, 251 rolls.

St. Regis Paper Co., Stockholm, Gothenburg, 1 roll (sample).

Meadows Wye & Co., Manchester Division, Avonmouth, 30 pkgs.

RAGS, BAGGINGS, ETC.

(———), Elin Horn, Istanbul, 2430 bls. rags.

Amicale Wool Service, Dominic, Pernambuco, 47 bls. new white cotton cuttings.

Bank of New York Trust Co., Alma Victory, Barcelona, 129 bls. dark cotton rags.

Continental Bank Trust Co., Norwalk Victory, Antwerp, 124 bls. jute rags.

J. Reiss, Agwiqueen, Ponce, 9 pkgs. rags.

Chase National Bank, Murmansk, Murmansk, 301 bls. cotton pickers.

1st National Bank Chicago, Murmansk, Murmansk, 6893 bls. cotton linters, 640 bls. cotton waste.

Continental Bank Trust Co., Exford, Alexandria, 81 bls. old bagging.

National Bank of Detroit, Exford, Marseilles, 25,074 bdls. camouflage strips.

(———), Exford, Genoa, 91 bls. bagging.

Manufacturers Trust Co., Exford, Genoa, 187 bls. old waste bagging.

Harris Goldman Co., Exford, Leghorn, 195 bls. cotton rags.

A. W. Fenton Co., Exford, Leghorn, 319 bls. old dark cotton rags.

Chase National Bank, Villanova Victory, Antwerp, 93 bls. old jute bagging, 193 bls. paperstock.

M. O. Schimmel, Jalakendra, Bombay, 225 bls. cotton waste.

New England Waste Co., Jalakendra, Bombay, 926 bls. cotton waste.

Herman Adlerstein, Scott E. Land, Genoa, 100 bls. old jute rags.

New England Waste Co., Scott E. Land, Genoa, 86 bls. cotton waste.

Empire Fiber Co., Pioneer, Hong Kong, 200 bls. cotton waste.

S. L. Ayres, Pioneer, Bombay, 100 bls. cotton waste.

C. Comiter, Pioneer, Hong Kong, 100 bls. cotton waste.

S. H. Waldstein, Pioneer, Hong Kong, 100 bls. cotton waste.

Amtorg Trading Corp., Vilnus, Libau, 1261 bls. cotton linters.

Kauders Steuber Co., Vilnus, Libau, 888 bls. cotton linters.

Irving Trust Co., Titan, London, 15 bls. new colored cottons, 27 bls. old khaki webbing.

GLUESTOCK

National City Bank, Agwidale, Havana, 105 bls.

A. Bloch, Exford, Genoa, 220 bls.

National City Bank, Titan, London, 77 bls.

WOODPULP

Cellulose Sales Co., Stockholm, Gothenburg, 2598 bls. kraft sulphate pulp, 1250 bls. air dry sulphate pulp, 3100 bls. sulphate pulp.

Castle & Overton, Inc., Stockholm, Gothenburg, 1800 bls. dry easy bleaching sulphite pulp.

Stora Kopparberg Corp., Stockholm, Gothenburg, 4964 bls. dry chemical pulp.

WOODPULP BOARDS

Jay Madden Corp., Winfield S. Stratton, Kotka, 580 rolls (solid white).

BOSTON IMPORTS

WEEK ENDING MARCH 6, 1948

Herman Adlerstein, Pres. Monroe, Genoa, 130 bls. dark cotton rags.

Albert Lee Co., Scott E. Land, Hong Kong, 17 cs. air mail paper.

PHILADELPHIA IMPORTS

WEEK ENDING MARCH 6, 1948

Tradesmans National Bank Trust Co., Titan, London, 59 bls. old webbing.

BALTIMORE IMPORTS

WEEK ENDING MARCH 6, 1948

National City Bank, Exford, Genoa, 294 bls. rags.

NORFOLK IMPORTS

WEEK ENDING MARCH 6, 1948

Dixie Jute Bagging Co., Leerdam, Rotterdam, 680 bls. jute waste.

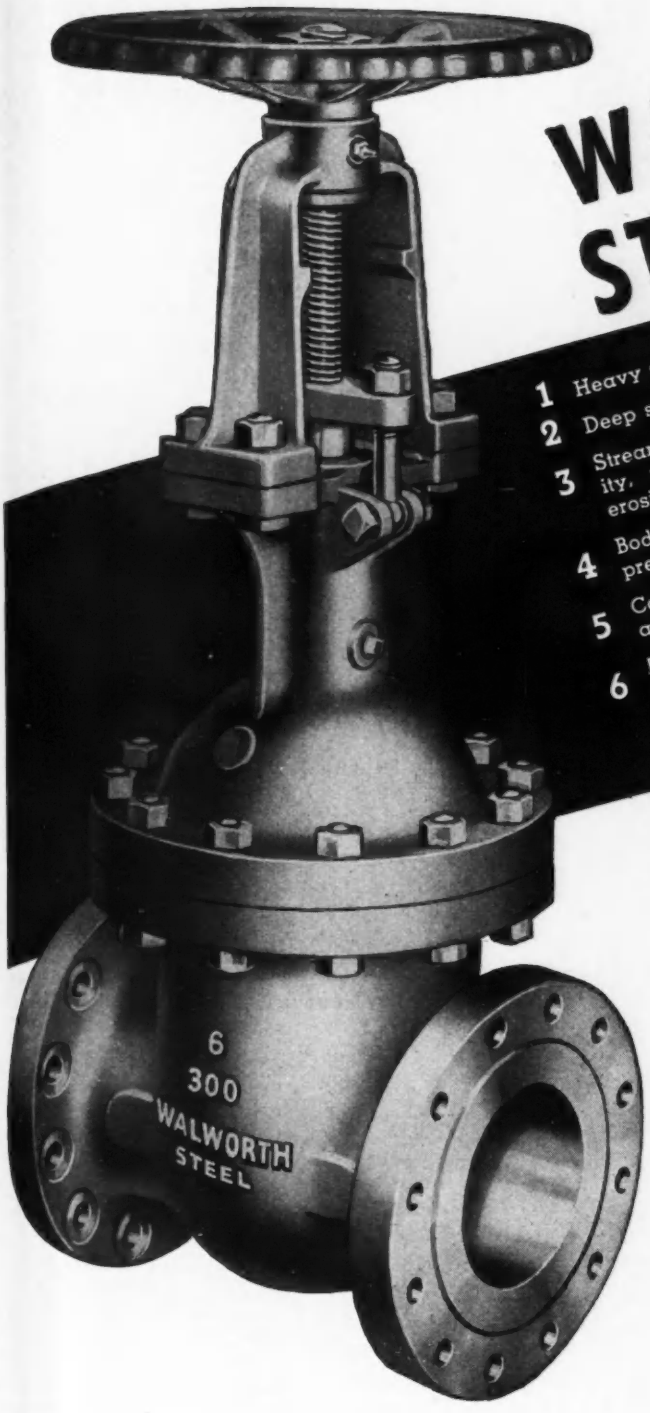
Brotherhood Building Nearly Completed

ALBANY, N. Y.—Construction of the new one-story office building of the International Brotherhood of Papermakers is expected to be completed early in May. The structure is reported about 35 percent finished. It is located on North Pearl Street and will provide more than 11,000 square feet of space for the labor organization, which has maintained headquarters in this city since 1911.

Safety School Session Ends

WAUSAU, Wis.—About 700 persons attended a final session of this year's vocational safety school here March 4. Representatives of the Wausau Paper Mills company, Brokaw, received one of two attendance trophies for the four session school. The safety school was sponsored jointly by the vocational school, the Chamber of Commerce and the Marathon County Safety Council.

You get all these BIG features in WALWORTH STEEL VALVES



1. Heavy steel walls for extra strength and protection.
2. Deep stuffing boxes to eliminate costly leaks.
3. Streamlined ports to make possible a high velocity, non-turbulent flow, and reduces possible erosion.
4. Bodies and bonnets engineered to withstand pressure and minimize distortion.
5. Cast body guide rib faces, machined to insure accurate disc centering.
6. Exact design, metallurgy and construction of yoke nuts, bonnet bushings, gland followers, handwheels and other vital parts to assure better service for a longer period of time.

Is there any wonder that out in the field, where approval is based on performance under actual operating conditions, industry has put its O.K. on Walworth Steel Valves?

Tough . . . wear resistant . . . dependable, these valves are produced in gate and globe types, in sizes to cover practically every service requirement. They are excellent examples of Walworth leadership . . . leadership that has made the Walworth valves famous throughout the world.

Walworth Catalog 42 gives complete information regarding Steel Valves as well as the full line of Walworth valves and fittings in bronze and iron. Your copy may be obtained upon request. Whenever you need valves — whether steel, bronze or iron — remember Walworth for dependability, economy, and long service life.

WALWORTH
valves and fittings
60 EAST 42nd ST., NEW YORK 17, N. Y.

TRENDS

Office of the PAPER TRADE JOURNAL,
Wednesday, March 10, 1948.

Apprehension generated by current news headlines over a possible Russo-Finnish military alliance is responsible for unfounded pessimism concerning Finland's trade on pulp and paper, in the opinion of Finnish representatives here. No excitement is felt by them over a matter that has been offered for discussion before. Should a military agreement be consummated, it should have no bearing whatever on either industry or trade, they point out, and assurance is given that Finnish trade commitments will not be disturbed.

While no increase in Finland's wood pulp production is anticipated, export tonnages should be approximately equal to those of 1947. Shortage of power is Finland's great problem. As a result of last summer's drought, the water level in Finnish water courses is calculated to be at its lowest point in a hundred years, this in a country which derives its power supply chiefly from water. Consumption of power has increased with industry's rapid expansion, and thirty percent of Finland's total power production was lost in territory to Russia. Expansion of the power plant net of the country is a necessity, it is reported. Nor can any relief be expected until the effect of rains and thaws is felt at the river mouths where most of the power stations are located, probably in the late spring.

As a contribution to price stability, Finnish wood pulp prices of the first quarter will be maintained through the second, with the exception of a $2.50 increase per ton on bleached sulphite made necessary by high cost of scarce chemicals. Price of bleached sulphite rises to $187.50 per short ton, ADT, on dock Atlantic ports, for unbleached sulphite is maintained at $155 to $157, and for unbleached sulphate at $147.50 per short ton, ADT. Newsprint prices matches the Canadian price of $96 a ton.

Swedish wood pulp prices for second quarter delivery reflect degrees of advance, some importers advancing more than others. Range of bleached kraft and bleached sulphite is announced as $185 - $195, unbleached sulphite $155 - $175, unbleached kraft $147.50 - $165.

Second quarter prices for domestic and Canadian wood pulp have not been issued, but no increase over first quarter quotations is expected. Price of southern kraft is firm at $130 to $145 despite a softening of supply. Mills are reported as not so hungry as they had been for market kraft, and offers of lots at $140 find no takers, finally are withdrawn by manufacturers for their own use.

The period of egg-treading described by market writers as typical of general market trend has produced a steadier condition in the paper and board markets. Prices are more stable, demand is more controlled, and supply generally improves. Predicted price rises on sulphite grades have been withheld, rag content though softened in supply is firm in price, and the market looks much healthier to old reliables of the trade.

Waste Paper

Reaction from stalled and frozen collections set in with less moderation than had been hoped for this week, and the waste paper market is described as softened under the two-fold influence of thawed out flow and cautious buying of mills.

Yankee sense of timing in some New England mills which had run close on inventories of folded news found heavy replenishments. Other mills were still able to wait for a better day. New York's market registered a waiting spell, and little activity is recorded. Prices of No. 1 news to mills is dropped to $17 - $19.

Ledger also is easier, today's mill price of $75 to $85 showing a drop of $10 a ton. Old corrugated though softer is quotably unchanged at $26 - $28.

Mixed is holding at $11 - $13, and higher grades are unchanged.

Cottons

Expected heavy supplies of new cottons are reaching the market in restricted flow, and no easing of the supply situation is apparent. This condition is taken to evince the cautious buying of cloth by apparel houses in view of the break in the commodity market. Neither was there any improvement in mill buying of available cuttings, and prices are at quotable levels.

Consistent mill demand for old cottons against a moderate flow of collections kept this market in firm condition. No change is expected from this structure until continued good weather stimulates spring housecleaning and consequent movement of quantities of rags.

Index

Index of general business activity for the week ended February 28 inclined to 153.5 from 150.3 in the preceding week, compared with 147.5 for the corresponding week of 1947. Index of paperboard production rose to 181.0 from 171.9 in the preceding week, compared with 181.7 in the corresponding week of 1947.

Paper production for the week ended February 28 was estimated at 102.1 percent compared with 99.4 for the previous week, with 108.5 for the corresponding week of 1947, with 101.8 for 1946, and with 89.3 for the corresponding week of 1946.

Paperboard production for the week ended February 28 was 101.0 percent of capacity, compared with 99.0 for the previous week, with 102.0 for the corresponding week of 1947, with 98.0 for 1946, and with 89.3 for the corresponding week of 1945.

Importers Seek Reductions In Customs Court

NEW YORK—New cases in the United States Customs Court in which importers are asking a revision downward of the duties collected by Customs officials are listed as follows by Warren B. Bullock, manager of the Import Committee of the American Paper Industry:

Three shipments of printed phonograph record envelopes from England classified as envelopes of paper not specially provided for at 30 percent plus 5 percent for printing are claimed to be dutiable at 15 percent, the rate for phonograph records.

Two shipments of printed candy wrappers from Canada assessed for duty at 5 cents per pound and 20 percent as manufacturers of wax coated paper, claimed to be dutiable at 25 percent as wrapping paper.

Watermarked bond paper from Newfoundland classified for duty at the writing paper rate of 3 cents per pound and 15 percent, claimed to be dutiable as printing paper at one-fifth of 1 cent per pound and 5 percent. The paper is in sheets 17 x 22 inches in size.

Fifteen tons of newsprint from Newfoundland classified for duty as printing paper claimed to be duty free as standard newsprint paper.

Brazilian Mill Increases Newsprint Production

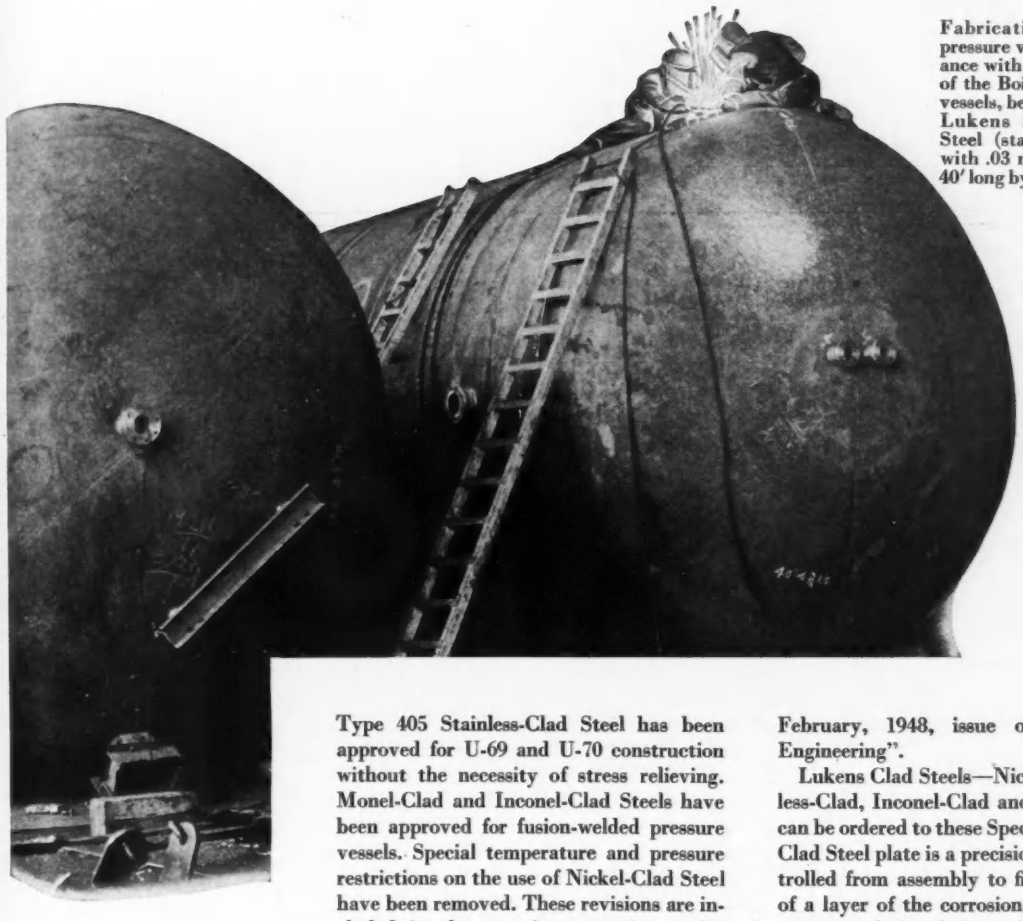
WASHINGTON — Increased newsprint production from a new paper mill in Brazil is reported from that country through American sources.

The new mill in December had attained a rate of 60 metric tons per day of newsprint, and 40 tons of sulphite pulp per day which is said to be only about half the actual capacity of the plant.

However, this represents about a third of Brazilian newsprint consumption, it is reported. Initial production was about 50 tons per day.

ASME Boiler Code Committee Approves

ADDITIONAL TYPES OF CLAD STEEL PLATE COMPLYING WITH ASME CLAD STEEL SPECIFICATIONS FOR FUSION-WELDED PRESSURE VESSELS



Fabricating Clad Steel pressure vessels in accordance with paragraph U-69 of the Boiler Code. These vessels, being built of 15% Lukens Stainless-Clad Steel (stainless type 316 with .03 max. carbon) are 40′ long by 13′ in diameter.

Type 405 Stainless-Clad Steel has been approved for U-69 and U-70 construction without the necessity of stress relieving. Monel-Clad and Inconel-Clad Steels have been approved for fusion-welded pressure vessels. Special temperature and pressure restrictions on the use of Nickel-Clad Steel have been removed. These revisions are included in the new interpretation under Case 896 of the ASME Boiler Code.

Materials covered by this approval are described in ASME (also ASTM) Specifications SA-263 on chromium steel clad plates, SA-264 on chromium-nickel steel clad plates and SA-265 on nickel and nickel-base alloy steel clad plates. Complete details of the Case appear in the February, 1948, issue of "Mechanical Engineering".

Lukens Clad Steels—Nickel-Clad, Stainless-Clad, Inconel-Clad and Monel-Clad—can be ordered to these Specifications. Each Clad Steel plate is a precision product, controlled from assembly to finish, consisting of a layer of the corrosion-resistant metal permanently bonded to a backing plate of ASME specification steel.

Lukens Clad Steels represent the most complete range available to industry. For additional information write for Bulletins 338 and 255, Lukens Steel Company, 403 Lukens Building, Coatesville, Pennsylvania.

CLAD METAL STEEL

LUKENS

Nickel-Clad Stainless-Clad
Inconel-Clad Monel-Clad
STEELS

★

SOLID METAL ADVANTAGES WITH CLAD STEEL ECONOMY

PRICES

With the elimination of price controls on paper, pulp, rags and other materials, the quotations given below once more become indicative of trends in an open market. At the moment they can be of little more, for, while some volume business still is being done under contract at the figures given below, fluctuations representing special conditions are too varied and too frequent to permit prices to be given as representing a wholly stabilized market.

Paper

(Delivered New York)

Standard News, per ton—

Rolls, contract	$93.00	to	$96.00
Sheets	102.50	"	109.00

Kraft—per cwt.—Carload Quantities Zone A Deld. 40 lb. base wgt.

Superstandard Wrapping	$9.00	to	—
No. 1 Wrapping	7.25	"	8.00
Standard Wrapping	6.50	"	—
Standard Bag	6.50	"	—

Tissues—Per Ream 24x36 (480) 11 lb. Zone 1.

Wh. No. 1 Frd.	$1.84	to	$2.00
Wh. No. 1 M. G.	1.94	"	2.00
Wh. No. 1½	1.60	"	—
Wh. No. 2	1.75	"	—
Kraft Anti-Tar	1.65	"	—
Kraft Unbl.	1.85	"	—
Manila No. 2	1.62	"	—
Shred. Wh. No. 1 cwt.	1.10	"	1.50

Toilet—Per Case of 100 rolls—1 M Sheets.

Unbleached	$8.50	to	$10.00
Bleached	8.50	"	10.00

Paper Towels—Per Case of 3750—Zone 1.

Wh. Jr. M'tif'd 9¼x9½			$5.15
Br. Sr. M'tif'd 10x12			3.60
Br. Jr. M'tif'd 9½x9¾			3.10
Br. Jr. Sgl. fold 10 x10¾			3.15

Manila—per cwt.—C.l. f.a.

No. 1 Jute Tag	$14.50	to	—
Reg. Jute Manila	13.25	"	$15.50
No. 1 Manila	9.75	"	—

Boards, per ton—

Plain News	$92.50	"	—
Filled News	94.00	"	—
Plain Chip	90.00	"	—
Sgl. Mla. J-d. Chip*	100.00	"	102.50
White Pat. Coated*	120.00	"	—
Kraft Liners 42 lb.	100.00	"	—
Kraft Corr. .009	105.00	"	—
Binders Boards	126.00	"	—

*** Base Prices per 10 tons. Less than 10 tons but over 3 tons, add $2.50; three tons or less, add $5; regular 35-39 basis, add $5; basis 40-49, add $2.50; basis 91-100, add $2.50; basis 101-120, add $5.**

The following prices are representative of distributors' resale prices, all deliveries in Zone 1: Rag Content Bonds and Ledgers—

White, Assorted Items

Bonds, per cwt.

Carton 4 C't'n	Ton
100% Rag Ext.	
No. 1 $55.00	$50.80 $48.70
100% Rag 48.25	44.55 42.70
75% Rag 37.50	34.55 33.10
50% Rag 32.25	29.40 28.25
25% Rag 28.75	26.15 25.10

Ledgers, per cwt.

100% Rag Ext.		
No. 1	$55.00	$50.80 $48.70
100% Rag	48.25	44.55 42.70
75% Rag	37.50	34.55 33.10
50% Rag	32.25	29.40 28.25
25% Rag	28.75	26.15 25.10

Sulphite Bonds and Ledgers—White, Assorted Items

Bonds, per cwt.

No. 1	$21.25	$19.25	$18.50
No. 2	20.25	18.30	17.55
No. 4	19.25	17.55	16.85

Ledgers, per cwt.

No. 1	$21.75	$19.65	$18.85
No. 2	20.75	18.75	18.05
No. 4	20.00	18.10	17.35

Free Sheet Book Papers—White, Cased Paper

(Per cwt.)	Case	Ton
No. 1 Glossy Coated	$20.40	$19.50
No. 2 Glossy Coated	19.15	18.30
No. 3 Glossy Coated	18.40	17.60
(Per cwt.)	Case	Ton
No. 1 Antique (Watermarked)	$15.90	$15.15
No. 2 Offset	15.15 to 17.90	14.60 to 17.10
A Grade E. F.	14.90	14.25
A Grade S. & S. C.	15.40	14.65
B Grade E. F.	13.90	13.30
B Grade S. C.	14.40	13.70

Wood Pulp

Domestic mill contract prices delivered with varying freight allowances.

	Per Short ADT	
Groundwood	$80.00	to $81.00
Unbleached Sulphite	124.00	" —
Bleached Sulphite	125.00	" 135.00
Bleached Soda	130.00	" —
Bleached Sulphate	175.00	" 185.00
Unbleached Sulphate Northern	125.00	" 155.00
Unbleached Sulphate Southern	130.00	" 145.00

Canadian Quotations

Prices delivered with varying freight allowances unless otherwise specified:

	Per Short ADT	
Reg. No. 1 Kraft	125.00	" —
Unbleached Sulphite	125.00	" 126.00
Bleached Sulphite	125.00	" 135.00
Glassine Unbleached Sulphite (no freight allowance)	120.00	" —
Bleached Soda	130.00	" —
Groundwood	80.00	" 85.00
Sideruns Pulping News	80.00	" —
Hardwood and Specialty Grades	Nominal	

Swedish Quotations

On dock, Atlantic Ports

	Per Short ADT	
Bleached Kraft	175.00	" 185.00
Bleached Sulphite	175.00	" 185.00
Unbleached Sulphite	145.00	" 175.00
Unbleached Kraft	140.00	" 165.00

Finnish Quotations

On dock, Atlantic Ports

	Per Short ADT	
Bleached Sulphite	$185.00	to —
Unbleached Sulphite	155.00	" 157.00
Unbleached Sulphate	147.50	" —

New Domestic Cotton Cuttings

(F.O.B. Shipping Point Plus Dealer's Commission)

White Shirt	$12.00	to	$12.50
Unbleached Muslin	12.00	"	12.50
Light Silesias	9.00	"	9.25
White Back Blue Overalls	9.00	"	9.50
Blue Overalls	8.00	"	8.25
Fancy Shirt	6.00	"	6.25
Light Percales	8.50	"	8.75
Light Prints	7.50	"	7.75
No. 1 Washables	5.00	"	5.25
Bleachable Khaki	7.50	"	8.00
Unbleachable Khaki	6.50	"	7.00
Cottonades	5.50	"	5.75

Old Domestic Cotton Rags

(F.O.B. Shipping Point Plus Dealer's Commission)

	Per 100 lbs.	
No. 1 Whites Repacked	$5.50	to $6.00
No. 1 Whites Miscellaneous	4.50	" 5.00
No. 2 Whites Repacked	3.50	" 3.75
No. 2 Whites Miscellaneous	3.00	" 3.50
Blue Overalls	3.75	" 4.00
Thirds and Blues Repacked	3.25	" 3.50
No. 1 Roofing Rags	2.10	" 2.15
No. 2 Roofing Rags	1.90	" 2.00
No. 3 Jute Bagging	1.75	" 1.85
No. 4 Brussels and hard back carpets	1.75	" 1.85
No. 5A Roofing Rags	1.75	" 1.85

New Foreign Cotton Cuttings

(Prices to Mill, F.O.B. Dock, N. Y.)

	Per 100 lbs.	
New Dark Cuttings	$5.50	to $5.75
New Mixed Cuttings	6.25	" 6.50
Light Silesias	9.25	" 9.50
Light Flannelettes	9.25	" 9.50
New White Cuttings	12.00	" 13.00
New Unbleached Cuttings	12.25	" 13.00
Fancy Shirt Cuttings	6.50	" 7.00
Light Prints	7.75	" 8.00
Bleachable Khaki, No. 1	7.00	" 7.50
Unbl. Khaki, No. 1	6.25	" 6.75

Old Foreign Rags

(Prices to Mill, f.o.b. dock, N.Y.)

	Per 100 lbs.	
No. 1 White Linens	$14.00	to 16.00
No. 2 White Linens	12.00	" 13.00
No. 3 White Linens	8.00	" 9.00
No. 4 White Linens	8.00	" 9.00
No. 1 White Cottons	8.00	" 10.00
No. 2 White Cottons	7.00	" 8.00
No. 3 White Cottons	6.00	" 6.50
No. 4 White Cottons	4.00	" 4.50
Extra Light Prints	6.50	" 7.00
Old Light Prints	4.50	" 5.00
Med. Light Prints	4.00	" 4.50
Dutch Blue Cottons	5.25	" 5.50
Checks and Blues	4.00	" 4.25
Linsey Garments	2.60	" 2.75
Dark Cottons, European	2.50	" 2.60
Dark Cottons, Egyptian	3.00	" 3.25
Old Shopperies	2.20	" 2.30
New Shopperies	2.40	" 2.50

Bagging

(Prices to Mill, f.o.b. N. Y.)

	Per 100 lbs	
Foreign Gunny, No.1	$6.00	to $6.50
Domestic Gunny, No. 1	6.25	" 6.50
Light Wool Tares	6.25	" 6.50
Heavy Wool Tares	6.00	" 6.25
No. 1 Scrap Bagging	5.50	" 5.75
Roofing Bagging	2.00	" 2.25
Foreign Manila Rope	6.00	" 6.75
Domestic Manila Rope	6.50	" 6.75
Jute Strings	5.00	" 5.25
No. 1 Sisal Strings	5.25	" 5.50
Mixed Strings	1.75	" 2.50

Waste Paper

Base Prices to Mills for Average Packings

(Dollars Per Ton)

F.o.b. New York, Baled

No. 1 Hard White Envelope Cuts, one cut	$155.00	to	165.00
No. 1 Hard White Envelope Cuts	145.00	"	155.00
No. 1 Hard White Shavings, unruled	145.00	"	155.00
No. 1 Hard White Shavings, ruled	110.00	"	130.00
Soft White Shavings, one cut	145.00	"	155.00
No. 1 Soft White Shavings	135.00	"	145.00
Soft White Shavings, Misc.	125.00	"	135.00
No. 1 Fly Leaf Shavings	45.00	"	—
No. 1 Groundwood Fly Leaf Shaving	35.00	"	—
No. 1 Heavy Books & Magazines	27.00	"	—
Mixed Books	15.00	"	20.00
No. 1 White Ledger	75.00	"	85.00
Manila Tab. Cards	9.50	"	11.00
New Manila Envelope Cuttings, one cut	100.00	"	110.00
New Manila Envelope Cuttings	65.00	"	75.00
Extra Manilas	25.00	"	30.00
Mixed Kraft, Env. & Bag Cuttings	75.00	"	85.00
Kraft Envelope Cuttings	110.00	"	—
Triple Sorted, No. 1 Brown Soft Kraft	65.00	"	75.00
New Kraft Corrugated Cuttings	80.00	"	85.00
No. 1 Assorted Old Kraft	55.00	"	60.00
New Jute Corrugated Cuttings	27.00	"	—
Old 100% Kraft Corrugated Containers	45.00	"	50.00
No. 1 News	17.00	"	19.00
No. 1 Mixed Paper	11.00	"	13.00
Box Board Cuttings	—	"	—
White Blank News	75.00	"	85.00
Overissue News	23.00	"	24.00
Old Corrugated	26.00	"	28.00
Mill Wrappers	22.00	"	24.00

Twines

All Prices Nominal, F.o.b. Mill

(Soft Fiber)

Coarse Polished—			
India	.33¾	to	.35
Fine India	.38¾	"	.42½
Fine Polished—			
Unpolished—			
Paper Makers	.28¾	"	.30¾
Tube Rope	.29	"	.31½
Wrapping	.32	"	.35¾
Cotton	.63¾	"	.66¾

(Hard Fiber)

Mex. Sisal	.21	"	.27
Manila (Reprocessed)	.30	"	.32

(American Hemp)

Polished Hemp	.36¾	"	.60
Unpolished	.32¾	"	.54

PHILADELPHIA

Domestic Rags (New)

(F.O.B. Eastern Shipping Point)

Shirt Cuttings—			
New White No. 1	.11	to	.12
New White No. 2	nominal		
Light Silesias	.07½	"	.08
Black Silesias, soft	.06½	"	.07
New Unbleached	.10½	"	.11¼
Washable Prints	.06¾	"	.07
Washable No. 1	.05	"	.05½
Blue Overall	.07¾	"	.08
Cottons—According to grades—			
Washable Shredding	.03¾	"	.04
Fancy Percales	.06¾	"	.07¼
New Black Soft	nominal		
Khaki Cuttings—			
Unbleachable Cotton Cuttings	.06	"	.06½
Bleachable Cotton Cuttings	.07	"	.07½
Men's Corduroy	.05¼	"	.06
Ladies' Corduroy	.05	"	.05¾
Cottonades	.05¾	"	.06

Domestic Rags (Old)

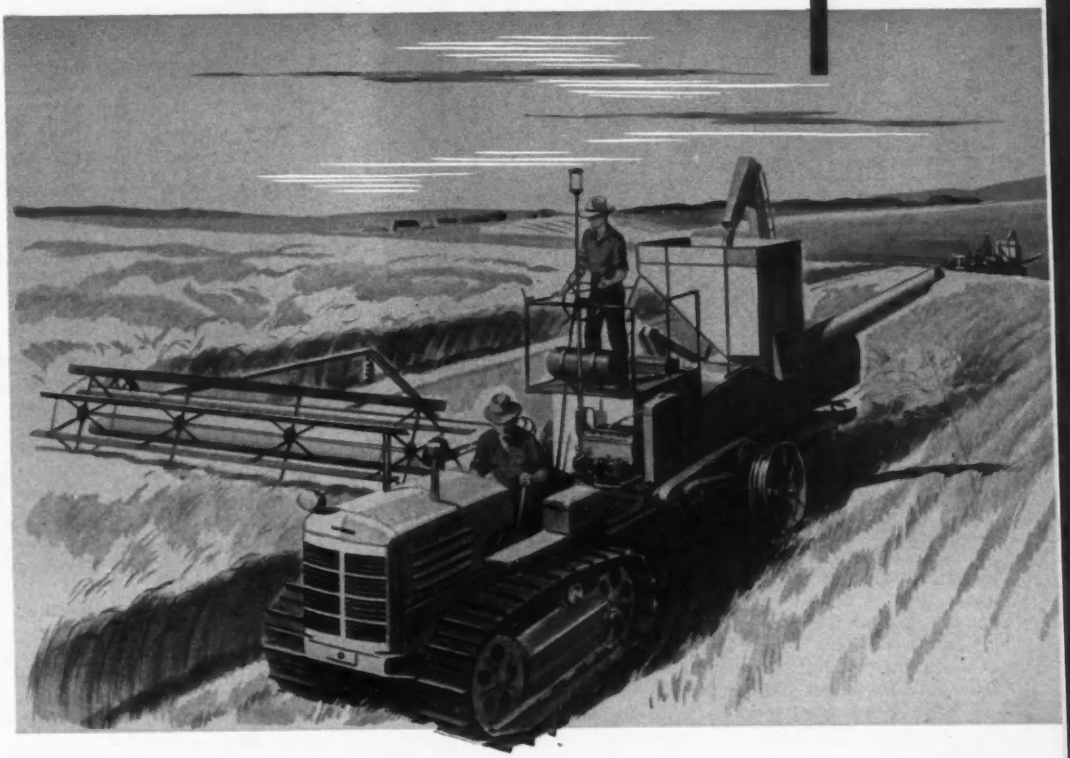
(F.O.B. Eastern Shipping Point)

White No. 1—Repacked	4.50	to	5.00
Mixed White	4.00	"	4.25
White No. 2—Repacked	3.50	"	3.75
Thirds and Blues—			
Miscellaneous	2.25	"	2.50
Repacked	2.75	"	3.00
Roofing Stock—			
Foreign No. 1	nominal		
Domestic No. 1	1.85	"	1.90
Domestic No. 2	1.75	"	1.80
Roofing Bagging	1.65	"	1.70
Old Manila Rope	6.25	"	6.50

Bagging

(F.O.B. Eastern Shipping Point)

Gunny No. 1—			
Foreign	nominal		
Domestic	4.75	to	5.25
No. 1 Clean Bright—			
Sisal Strings	.04½	"	.05
No. 2 Clean Bright—			
Sisal Strings	.03½	"	.04
Sisal Jute	.02¾	"	.03
Scrap—			
No. 1	5.00	"	5.50
No. 2	2.50	"	3.00



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As you watch a huge modern harvester-thresher at work you are impressed with the speed and efficiency of its performance. But behind this performance are decades of pioneer effort and painstaking development. This is true of practically all modern industrial achievements. It is true of modern electro-chemical products, many of which were produced for the first time in this country by Niagara Alkali Company and groomed to amazingly accurate standards of quality, uniformity and efficiency by continuous pioneering research on the part of Niagara. This pioneering has made Niagara "An Essential Part of America's Great Chemical Enterprise."

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LIQUID CHLORINE • CAUSTIC POTASH • CARBONATE OF POTASH • PARADICHLOROBENZENE • CAUSTIC SODA • NIAGATHAL (TETRACHLORO PHTHALIC ANHYDRIDE)

Wool Shares, heavy	4.75	"	5.00
New Burlap Cuttings	6.00	"	6.50

Old Papers

(F. o. b. Phila.)
Mill Prices, Baled

No. 1 Hard White Envelope Cuts, one cut	$100.00	to	$115.00
No. 1 Hard White Shavings, unruled	100.00	"	—
Soft White Shavings, one cut	90.00	"	95.00
White Blank News	70.00	"	75.00
Soft White Shavings	80.00	"	—
No. 1 White Ledger	85.00	"	90.00
Ledger, Colored	70.00	"	72.00
No. 1 Heavy Books & Magazines	24.00	"	26.00
Overissue Magazines	nominal		
New Manila Envelope Cuttings	80.00	"	—
No. 1 Assorted Old Kraft	60.00	"	65.00
No. 1 Mixed Paper	11.00	"	12.00
Box Board Cuttings	10.00	"	11.00
Kraft Corrugated Cuttings	90.00	"	100.00
Old Corrugated	24.00	"	26.00
Overissue News	20.00	"	22.00
No. 1 News	13.00	"	15.00

BOSTON

Old Papers

(F.o.b. Boston)
Mill Prices, Baled

No. 1 Hard White Shavings, unruled	6.25	to	6.75
No. 1 Hard White Shavings, ruled	6.00	"	6.50
Soft White Shavings, Misc.	5.25	"	5.50
No. 1 Fly Leaf Shavings	1.75	"	1.85
No. 2 Fly Leaf Shavings	1.65	"	1.75
No. 1 Groundwood Fly Leaf Shavings	1.75	"	2.00
No. 2 Groundwood Fly Leaf Shavings	1.50	"	1.75
Mixed Colored Shavings	2.00	"	2.25
New Manila Envelope Cuts, one cut	4.50	"	4.75
Hard White Envelope Cuts, one cut	6.00	"	6.50
Triple Sorted No. 1 Brown Soft Kraft	3.75	"	4.00
Mixed Kraft Env. & Bag Cuttings	4.00	"	4.25
Kraft Envelope Cuttings	3.75	"	4.00
No. 1 Heavy Books & Magazines	1.25	"	1.75
New Manila Envelope Cuts, one cut	—	"	—
New Manila Envelope Cuttings	4.00	"	4.25
White and Colored Tabulating Cards	4.00	"	4.50
Groundwood Tabulating Cards	1.50	"	1.75
White Blank News	2.25	"	2.50
No. 1 Assorted Old Kraft	3.50	"	—
No. 1 Mixed Paper	.65	"	.75
Overissue News	1.00	"	1.25
Box Board Cuttings	.60	"	.70
New Corrugated Cuttings, Kraft	2.75	"	3.00
Old Kraft Corrugated Containers	1.75	"	—
Old Corrugated Containers	1.25	"	1.30
Jute Corrugated Cuttings	1.07½	"	—
Paper Strings	2.00	"	2.25

Bagging

(F. o. b. Boston)

Gunny Bagging—			
Foreign	—	to	4.75
Domestic	—	"	4.75
Sisal Rope No. 1	6.00	"	—
Sisal Rope No. 2	5.50	"	—
Mixed Rope	5.25	"	—
Mixed Strings	2.00	"	2.50
Transmission Rope—			
Foreign	(nominal)		
Domestic	3.00	"	3.50
Manila Rope—			
Foreign	(nominal)		
Domestic	6.25	"	—
Soft Jute Rope	5.00	"	5.25
Jute Carpet Threads	6.00	"	—
Bleachery Burlap	8.50	"	9.00
Scrap Burlap—			
Foreign	—	"	4.75
Domestic	—	"	4.87½
South America	5.25	"	—
Wool Tares—			
Foreign	4.75	"	—
Domestic	4.75	"	—
Aust. Wool Pouches	5.00	"	5.25
New Zealand Wool Pouches	5.25	"	5.50
New Burlap Cuttings	6.00	"	6.50
Heavy Baling Bagging	5.25	"	5.75
Paper Mill Bagging	3.50	"	3.75
No. 1 Roofing Bagging	1.75	"	—

Domestic Rags (New)

(F. o. b. Boston)

Shirt Cuttings—			
New Light Prints	.08	to	—
Fancy Percales	07½	"	.08
New White No. 1	.11	"	.11½
New Light Flannelettes	08	"	.08½
Canton Flannels, Bleached	.10	"	.11
Underwear Cutters, Bleached	.10	"	.11
Underwear Cutters, Unbleached	.11	"	.12
Silesias No. 1	.08	"	.08½
New Black Silesias	.05	"	—
Red Cotton Cuttings	.05	"	—
Blue Overalls	.08½	"	.09
Soft Unbleached	.11	"	.12
Blue Cheviots	.08½	"	.09
Fancy	.06	"	—
Washable	.06	"	—
Khaki Cuttings	.06½	"	.07½
Corduroy	.03½	"	—
Khaki Canvas	.06¼	"	.06¾
B. V. D. Cuttings	.10¾	"	.11¼

Domestic Rags (Old)

(F. o. b. Boston)

White No. 1—			
Repacked	3.80	to	—
Miscellaneous	3.20	"	—
White No. 2—			
Miscellaneous	2.65	"	—
Twos and Blues, Repacked	2.20	"	—
Old Blue Overalls	2.25	"	2.50
Thirds and Blues, Repacked	2.20	"	—
Miscellaneous	1.80	"	—
Black Stockings	3.50	"	4.00
Roofing Stock—			
No. 1	2.00	"	—
No. 2	1.75	"	2.00
No. 3	1.35	"	—
No. 4	1.35	"	—
No. 5, Quality A	1.35	"	—
Quality B	1.20	"	—
Quality C	.95	"	—
Old Manila Rope	6.00	"	—

Foreign Rags

(F. o. b. Boston)

Canvas	(nominal)
Dark Cottons	(nominal)
Dutch Blues	(nominal)
New Checks and Blues	(nominal)
Old Fustians	(nominal)
Old Linsey Garments	(nominal)
New Silesias	(nominal)

CHICAGO

Waste Paper

(F. o. b. Chicago)
Mill Prices, Baled

Shavings—			
No. 1 Hard White Envelope Cuts, one cut	$150.00	to	—
No. 1 Hard White Shavings, unruled	140.00	"	—
No. 1 Soft White Shavings	120.00	"	—
No. 1 White Ledger	95.00	to	—
No. 1 Heavy Books & Magazines	30.00	"	35.00
White Blank News	80.00	"	85.00
Mixed Kraft Env. & Bag Cuttings	80.00	"	90.00
No. 1 Assorted Old Kraft	35.00	"	—
Overissue News	27.00	"	—
No. 1 News	23.00	"	—
No. 1 Mixed Paper	15.00	"	—
Old Corrugated	25.00	"	—
Mill Wrappers	16.00	"	—

MARKETS

BLANC FIXE — Market unchanged. Prices firm. Demand heavy. Pulp is currently quoted at $85 in bags, car lots at works, 6 cents per lb., l.c.l., deld.; by-product $75 per ton, car lots at works, 6 cents per lb., l.c.l., deld.

BLEACHING POWDER—Supply improves. Shortage of shipping containers a delivery problem. Prices range from $3.75 to $4 per 100 pound drums, l.c.l, works.

CASEIN — Market quiet with prices holding. Current prices on processed acid precipitated casein, at 33 to 35 cents per pound for domestic grades and 28½ to 30 cents for imported grades, f.o.b. shipping point.

CAUSTIC SODA—Capacity production unequal to increasing demand. Restrictions on export resale price and new output should reduce problem this year. Tank car shortage critical. Solid caustic is reported at $2.85 per cwt.; flaked and ground is quoted at $3.25 per cwt. in 400 pound drums, $3.75 per cwt. in 100 pound drums—car lots at works; liquid 50 percent in tank cars at $2.25 per cwt.; liquid 73 percent in tank cars at $2.35 per cwt. at works.

CHINA CLAY—Domestic grades and imported in good supply. Filled is $9 to $11.50 per ton, car lots; coating clay is $14 to $22. Imported clay quotation, short tons, $16 to $35, export warehouse.

CHLORINE — Supply condition tighter. Demand increased. Deliveries restricted by slow rolling of tank cars. Prices unchanged. Currently quoted at $2.25 per cwt. in single unit tank cars, at $2.55 to $3.75 per cwt. multi-unit tank cars, f.o.b. works.

ROSIN — Unexpected sharp price dip. Gum rosin in drums per 100 pounds net in yard. New York car lots. B, $9.55; D, $9.80; E, $10.05; F, G, H, $10.30; K, M, N, $10.50; WG, $10.70; WW, $10.80; wood rosin, per 100 pounds, net, f.o.b., l.c.l., N. Y., B, $6.45; FF, $7.95; G, H, I, K, $10.20; M, $10.25; N, $10.64; WG, $10.95; WW, $11.08; X, $11.18.

SALT CAKE — Demand continues ahead of supply with slight improvement in shipments. Prices unchanged. Domestic salt cake is quoted at $20 to $26.

SODA ASH — No easing of strong demand and tight supply. Shipments only against contracts. Current prices, car lots, per 100 pounds: in bulk, $1.10; in paper bags, $1.30; and in barrels, $1.70.

SODIUM BICARBONATE—Supply improved. Shortage of box cars delays shipment. Reported as $1.85 per cwt. paper bags, carload lots.

STARCH—Market strong with steady demand and good supply. Prices rise 30 cents cwt. with corn market. Export market quiet because of dollar shortage. Pearl grade quoted at $6.96 per 100 pounds; powdered starch at $7.07 per 100 pounds; car lots, New York.

SULPHATE OF ALUMINA—Prices unchanged. Supply steady. The commercial grades are quoted at from $1.15 to $1.30 per 100 pounds, in bags, car lots, f.o.b. works. Iron free is $2 per 100 pounds in bags, car lots, at works.

SULPHUR—Supplies ample. Prices unchanged. Annual contracts are quoted at $16 to $18 per long ton, f.o.b. mines; the price f.o.b. at Gulf ports is $17.50 to $19.50 per long ton.

TALC—No change in domestic market. Demand far in excess of supply. Domestic grades are currently quoted at $21 per ton in mines; Canadian at $35 and up per ton. All prices in car lots.

TITANIUM DIOXIDE—Extremely tight supply with no early easing seen. Shipments on allocation. Anastase 17½c lb. carload lots, 18-18½c. l.c.l.; rutile, 19½c lb. carload lots, 20-20½c l.c.l.; 50-lb. bags, f.o.b. plant, minimum freight allowance.

for Power or Process piping . . .
everything's in the CRANE line

Valves, fittings, or pipe line accessories . . . pipe or shop-fabricated piping units . . . whatever you need for new installations or replacements . . . most likely Crane supplies it. And with good, dependable quality in every single item.

On this water treating installation, for example, here's how the complete Crane line helps simplify the whole piping job. You specify from one catalog . . . get everything on one order to your local Crane Branch or Wholesaler. From start to finish, the job moves fast and smooth . . . with good piping performance assured. Because when you standardize on Crane materials, you get this 3-way advantage:

ONE SOURCE OF SUPPLY offering the world's largest selection of steel, iron, brass and alloy piping materials for all power, process, and general service applications.

ONE RESPONSIBILITY for piping materials—helping you to get the best installation, and to avoid needless delays on the job.

OUTSTANDING QUALITY in every item—assuring uniform dependability and durability throughout piping systems.

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SOURCE OF SUPPLY
RESPONSIBILITY
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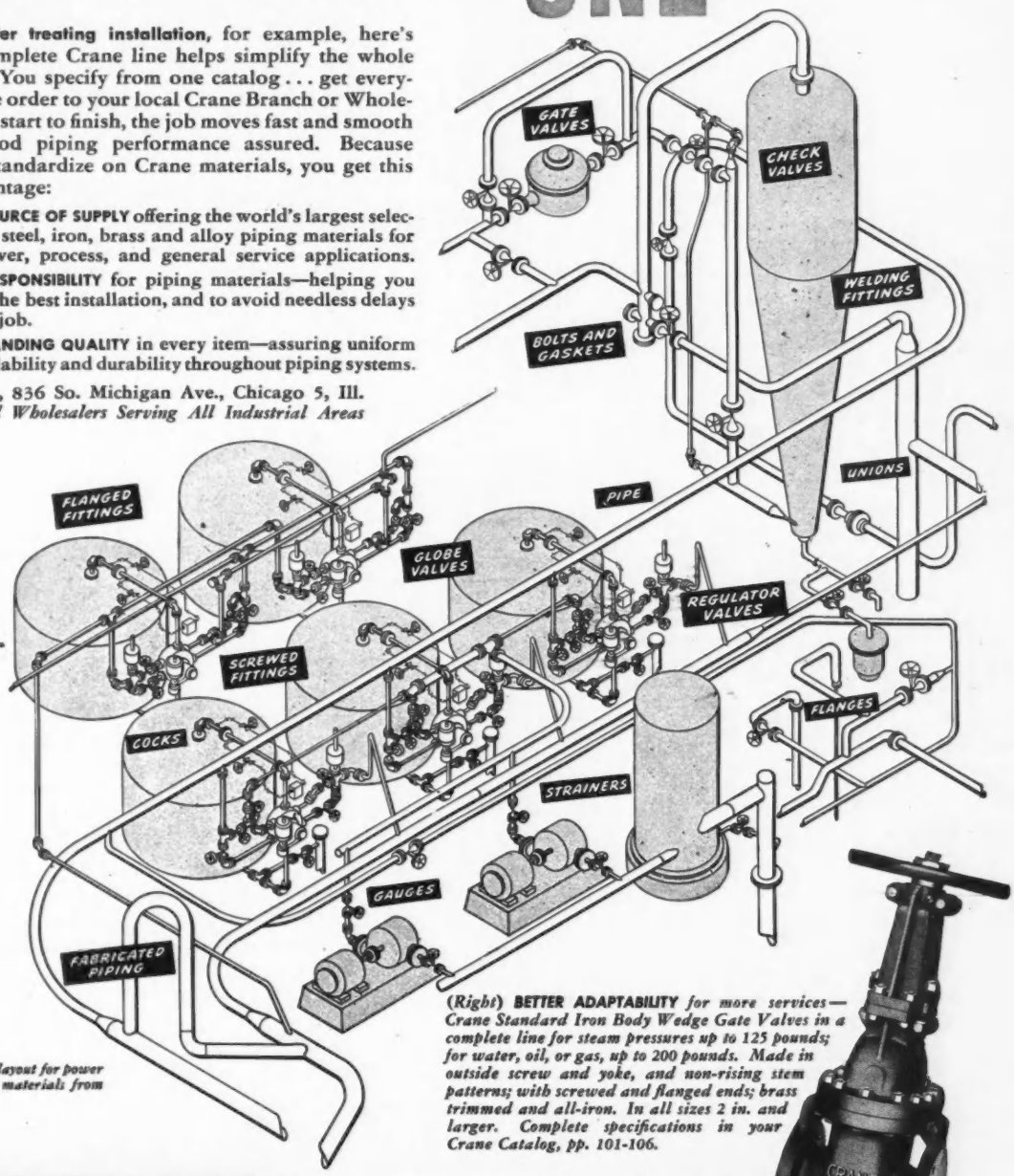

Water treating layout for power plant . . . piping materials from Crane.

(*Right*) **BETTER ADAPTABILITY** *for more services—Crane Standard Iron Body Wedge Gate Valves in a complete line for steam pressures up to 125 pounds; for water, oil, or gas, up to 200 pounds. Made in outside screw and yoke, and non-rising stem patterns; with screwed and flanged ends; brass trimmed and all-iron. In all sizes 2 in. and larger. Complete specifications in your Crane Catalog, pp. 101-106.*

EVERYTHING FROM . . .

VALVES • FITTINGS
PIPE • PLUMBING
AND HEATING

CRANE

FOR EVERY PIPING SYSTEM

Goodrich Names Brous Chemical Sales Head

CLEVELAND, Ohio—A department to handle sales of new chemical products of B. F. Goodrich Chemical Company has been set up by John R. Hoover, vice-president of sales. Many of the products assigned to the new sales group will be manufactured in the recently announced $3 million chemical plant to be built at Avon Lake.

Sam L. Brous, formerly manager of sales development, has been named head of the new Chemical Sales Department, Hoover said. Brous has been associated with The B. F. Goodrich Company in Akron and B. F. Goodrich Chemical Company in Cleveland since 1929 in a succession of chemical research, development and sales capacities. He is a member of the American Chemical Society, Technical Committee of the Plastic Materials Manufacturers Association, Alpha Chi Sigma and the Chemists' Club of New York.

Products to be handled by the new sales group will include organic chemicals, chemical intermediates and agricultural chemicals. These materials will supplement the company's present Geon polyvinyl resins and plastics, Hycar American rubber and rubber chemicals.

Young Retires as Kimberly Receptionist

NEENAH, Wis.—E. W. Young, veteran Kimberly-Clark employe and senior receptionist at the main office for the last ten years, was honored at a noon luncheon March 5 as he retired from active employment. He was given a large seascape painting by 17 friends and associates who attended the party.

Young joined the corporation at Kimberly in 1914. and put into operation the first systematic warehousing plan. He initiated the corporation's program for salvaging and re-using usable materials and has been active in safety promotion work. In 1926, he joined the staff in Neenah, heading up warehousing in the company mills. He was chairman of the first group to work out a program for standardizing of materials, and then later moved into the firm's purchasing department. In 1938, Young became senior receptionist in the main office.

Guests at the luncheon included Ernst Mahler, W. H. Clifford, J. F. Hunt, H. C. Dupont, M. G. Hoyman, R. J. Zaumeyer, M. H. Kettenhofen, L. A. Eisenach, V. S. Ames, J. T. Doerfler, J. C. Simonich, F. F. Martin, W. H. Swanson, W. R. Kellett, L. C. Stilp, F. W. Poppe and J. L. Sensenbrenner.

Sandy Hill Marks Its 90th Anniversary

HUDSON FALLS, N. Y.—The Sandy Hill Iron and Brass Works held its annual banquet recently at the Queensbury, marking the 90th anniversary of the concern's founding. The affair was among the most successful employe-management banquets ever conducted by the organization. Dinner was served to approximately 500 employes and invited guests.

In opening the program, J. Walter Juckett, secretary and assistant treasurer of the company, who acted as master of ceremonies, pointed out that the banquet marked the opening of a year of jubilee observing the 90th anniversary of the founding of the firm. Frank A. Juckett, president of the company offered a word of welcome in which he pointed out a number of outstanding accomplishments recorded during the past year, including the building of a number of complete modern paper machines. He also introduced Carlos Cremonini and Carlos Ricci, who were recent visitors as agent of their firm, Cellulosa Argentina, of Buenos Aires, Argentina, a customer of the local firm.

Following a custom established last year, service pins were awarded to a number of employes with the firm for long terms. Fred C. Snyder, of Kingston, renowned world traveler, lecturer and newspaper columnist, was guest speaker at the event.

Thomas Resigns at Bagley & Sewall

WATERTOWN, N. Y. — David A. Thomas has submitted his resignation as vice-president and general manager of the Bagley & Sewall Company. Mr. Thomas said that he has plans which he is unable to disclose at the present time, but which will not require his removal from Watertown. No successor to him has been appointed by the Bagley & Sewall company.

Upon his election to the vice-presidency of Bagley & Sewall, Mr. Thomas removed from Chicago to this city on February 1, 1947. He is a native of Victoria, B. C., where he received his preparatory education. He entered the University of California, then transferred to the California Institute of Technology at Pasadena and was graduated in 1934 with degrees in aeronautical and mechanical engineering.

In 1940 he took a position with Foote Brothers Gear & Machine Corporation in Chicago. When the United States entered the war he undertook special flight research work which he continued during the war, and after the war returned to Foote Brothers as a senior executive.

Williams-Gray Takes East For Lindsay Wire

CLEVELAND, O.—The Williams-Gray Company, 221 North LaSalle Street, Chicago, Illinois, has been appointed to represent the Lindsay Wire Weaving Company in the eastern states as they have in the west, central and southern states for a great many years.

E. H. "Bob" Williams, was the first salesman that the Lindsay Company employed. That was shortly after the company was organized, forty-five years ago. Mr. Williams and his sales people have grown close to the company which feels that their contact with its customers is as direct as anyone could wish.

MEISEL MACHINERY IS HELPING IN ALL FIELDS

Cigarette	**Wax**	**Photographic**	**Jet Propulsion**
Condenser	**Grease Proof**	**Snap-out Forms**	**Aero-engine Parts**

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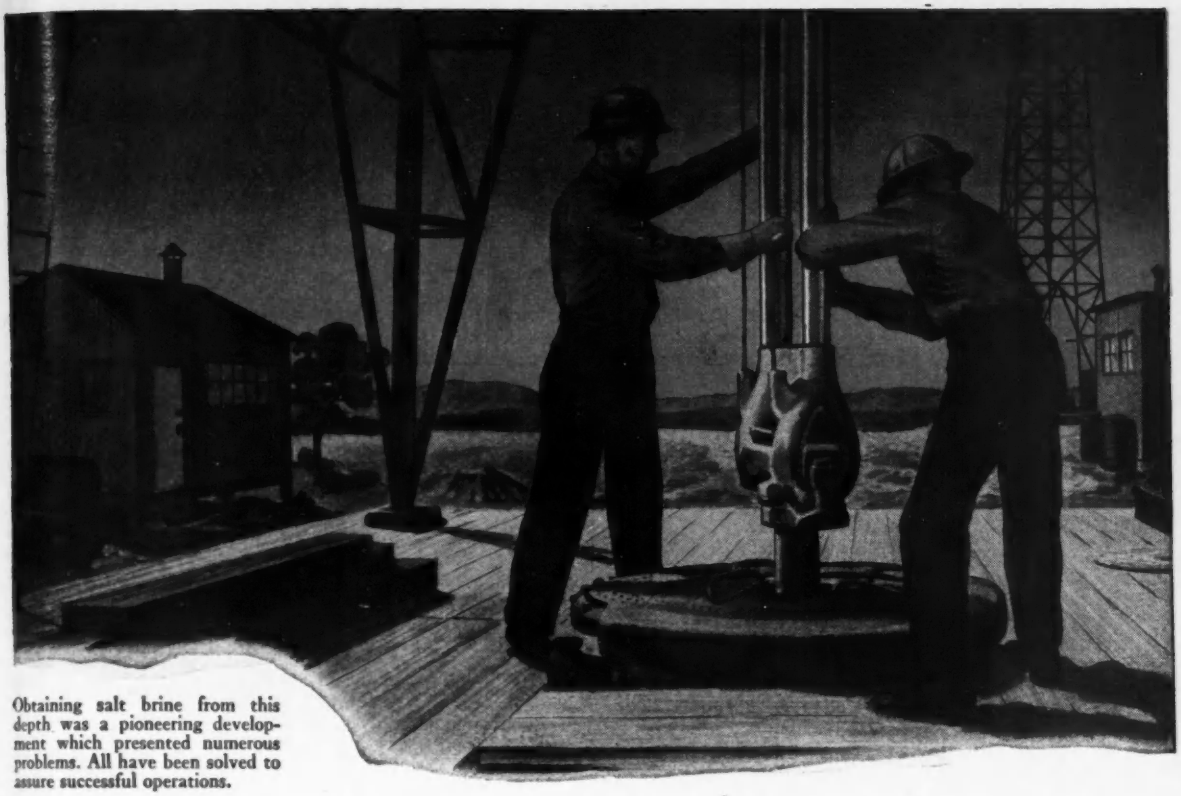
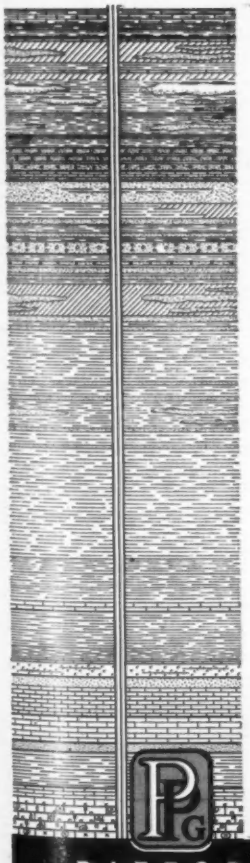


Obtaining salt brine from this depth was a pioneering development which presented numerous problems. All have been solved to assure successful operations.



Chlorine and Caustic Soda

from the world's deepest salt wells

The deepest salt bed in commercial use—6,800 feet below the earth's surface—provides the brine used at Columbia's electrolytic chlorine-caustic soda plant at Natrium, West Virginia. Hot water, pumped down to this great stratum, dissolves the rock salt and forces the brine to the surface.

The favorable location of the Natrium plant was established as a result of pre-Pearl Harbor studies by Columbia. Built and operated for the DPC, its post-war purchase by Columbia assured continued operation so helpful in meeting the urgent needs of industry for caustic and chlorine. The caustic soda is purified by a patented Columbia process to meet exacting uses such as required in the manufacture of rayon.

Pittsburgh Plate Glass Company, Columbia Chemical Division, Pittsburgh 13, Pa. District Offices: Chicago, Boston, St. Louis, Pittsburgh, New York, Cincinnati, Cleveland, Minneapolis, Philadelphia, Charlotte, San Francisco.

COLUMBIA CHEMICALS

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PITTSBURGH PLATE GLASS COMPANY

Dunning Addresses Marinette Staff

MARINETTE, Wis. — Harrison F. Dunning, general manager of all Scott Paper company paper mills, addressed employes of Marinette Paper Company on March 3 and 4.

Dunning spoke at five different times during the two-day period so that all shifts at the company's three local plants would have an opportunity to hear his presentation.

Dunning reviewed the highlights of the company's business in 1947 and the present position of the concern in regard to production, sales and profits. A chart which he used to amplify his remarks showed that hourly earnings of local employes exceeded those of the pulp and paper industry. Another comparison revealed that average weekly earnings at the paper company have risen considerably above the advance in the cost of living.

Dunning emphasized management's concern over the present inflationary spiral and the necessity for continuing to manufacture quality products to sell at the lowest possible prices. For 1948, he said, the company's aim is to further reduce costs by achieving greater operating efficiencies because "wage increases should come from greater output and higher operating efficiencies, not from increased selling prices."

Dunning was introduced to each group by General Plant Manager D. B. Wilkinson, who said that it was intended to make these reports annual events at all Scott mills.

Which of these jobs can TAMOL do better for you?

PITCH CONTROL. Through the years, Rohm & Haas TAMOL P has demonstrated its value for positive pitch control on sulfite and groundwood pulps . . . Original cost is low (2 to 3 pounds per ton of pulp being sufficient generally)—and costly shutdowns for cleanups are minimized. TAMOL P is non-abrasive and non-corrosive. It is supplied in convenient dry form.

PIGMENT DISPERSION. Rohm & Haas TAMOL P is an efficient dispersing agent and deflocculant for calcium carbonate, titanium dioxide, clays, carbon black and other pigments. It is highly effective in alkaline systems. It is very useful in promoting fluidity in starch-bound coating colors.

GLUE PRECIPITATION. Rohm & Haas TAMOL P, used as a precipitant for animal glue in the beater, results in highly increased retention. It is added after the size, alum and glue solution—and is also used with the animal glue in the head-box or beater to aid in retention of fillers and fines.

If you have these manufacturing problems, write today for further information regarding TAMOL P—another of the Rohm & Haas group of time-tested paper chemicals.

Tamol is a trade-mark, Reg. U.S. Pat. Off

ROHM & HAAS COMPANY

Philadelphia 5, Penna.

Powell River Crew Gets First Shave

POWELL RIVER, B.C.—Concentration on Accident Prevention by all ranks has been the order of the day in the big pulp and paper plant at Powell River. On January 1st, members of Powell River Safety Committee agreed not to shave as long as their accident record remained unbroken. After 72 consecutive days the mill had its first accident and safety committee members were able to enjoy their first shave.

This 72 consecutive days without a compensable accident is an all-time record. The result was achieved by an intensive safety campaign in which everyone participated. It aroused a spirit of emulation in all departments and has given mill committees and employes a mark to shoot at in the future.

The accident chain was broken on the 73rd day when an employe suffered a sprained foot.

With a payroll of over 1,700, the largest of any pulp and paper plant in British Columbia, Powell River employes are proud of their record and are out to achieve an even higher standard.

As a result of this long non-accident period, employes realize more than ever that accidents can be avoided and that the answer lies in everyone making it his own personal business to think and act safely.

Noble & Wood Holds Annual Meeting

HOOSICK FALLS, N. Y.—The annual meeting of the Nobel & Wood Machine company was held recently for the purpose of electing directors and officers for the ensuing year. Among the officers chosen were H. N. Weir, Sr., president and treasurer; Dr. C. E. Shaw, vice president, and H. F. Cramer, secretary. The officers with H. B. Thompson, H. S. Lapan and Myron H. Earley comprise the board of directors.

Chamber of Commerce Elects Harlowe Hardinge

YORK, Pa. — Harlowe Hardinge, president of the Hardinge Company, Incorporated, manufacturer of equipment for the mining, chemical, ceramics, sanitation, and paper industries —has been elected a director of the Pennsylvania State Chamber of Commerce for a two-year term.

OBITUARY

Thomas J. Reese

FORT LAUDERDALE, Fla.—Heart disease took the life of Thomas J. Reese, former Buffalo Branch Manager for International Printing Ink Division of Interchemical Corporation and prominent Buffalo, N. Y., public figure, on February 16th. Mr. Reese, who was 73 years of age, had been active in the printing ink business for more than a third of a century and retired from active participation in 1946. For the past few years he had been spending a part of each winter in Florida.

Upon the formation of International Printing Ink Corporation in 1928, Mr. Reese became a vice-president of the new firm. Then in 1937 when IPI became a division of Interchemical Corporation he was made manager of the IPI Buffalo branch and continued in that capacity until his retirement. His name will be carried on by his son, Thomas J. Reese, Jr., who succeeded his father as Buffalo branch manager for IPI.

Edgar G. Murphy

NORWALK, Conn.—Edgar Guillam Murphy, former leader in the pulp and paper industry, died last week at his home here of a heart attack. His age was 78.

Born in Fort Edward, N. Y., Mr. Murphy was a plant manager for the International Paper Company and later managed plants for the Union Bag and Paper Company in Bellows Falls, Vt., and Schuylerville and Hudson Falls, N. Y.

In 1902 he organized the St. George Pulp and Paper Company, which acquired woodlands and water power in St. George, N. B. The next year a survey of the coastline near New York led him to build a plant in Norwalk.

Many New York and New England newspapers were supplied by the St. George company before its sale in 1920 to The New York World. From 1921 to 1924 Mr. Murphy managed the Hartje Paper Company in Steubenville, Ohio.

Lorenzo Benemelis

HOLYOKE, Mass.—Lorenzo M. Benemelis, 60, general superintnedent of the White & Wyckoff Manufacturing Co., died suddenly February 28 of an acute heart attack.

Mr. Benemelis joined White & Wyckoff on May 1, 1922, as a foreman in the stationery department, and held that position until January 1, 1938, when he became general superintendent of the plant. Previous to coming to Holyoke, he had been associated with Eaton, Crane & Pike Company, of Pittsfield for several years.

Mr. Benemelis was a past president of the American Chemical Society. His wife, and two sons survive him.

MATERIAL HANDLING *News*

You'll appreciate why Clark Electric Battery-Powered Fork Trucks enjoy an extraordinary leadership when you consider these basic advantages:

1. **Clark manufactures its own major units**
2. **Clark enjoys the benefit of assembly line production**
3. **Clark provides maximum interchangeability of parts**

Among industrial executives who *know operating costs* of electric fork trucks—taking into consideration initial investment, maintenance cost and operating cost—Clark electric fork trucks are preferred by a generous margin.

These men's opinions may be summarized in the terse comment of one of them—"Clarks cost less!"

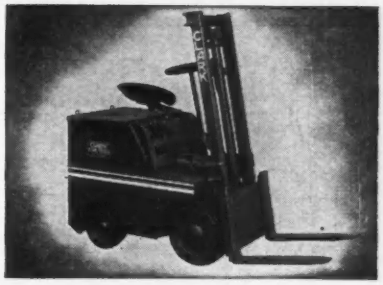
1. VOLUME MANUFACTURE EFFECTS BIG SAVINGS

It is a fact scarcely in need of emphasis to production men that the volume manufacture of Clark machines achieves many important economies. Practically all the major units in Clark machines are produced in Clark's own plants, and on a mass scale—axles, transmissions, wheels, frames and smaller units. All these units must meet the exacting standards established for Clark Products. All possess that rugged excellence that has built the Clark reputation for fine engineering.

Economical assembly saves dollars for customers. Here electrical control gets final inspection.

2. ASSEMBLY-LINE ECONOMIES

A further benefit passed along to users of Clark machines derives from Clark's assembly-line production. Inasmuch as Clark builds both types of fork truck—electric battery-powered and gas-powered—Clark's output is by far the largest in the industry.

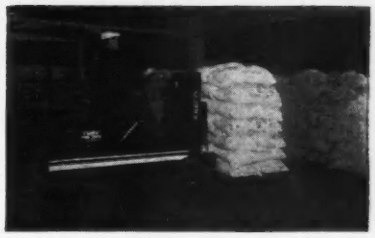


Here is electric battery power in fast, maneuverable form — instantly applicable to countless routine assignments.

3. INTERCHANGEABLE PARTS

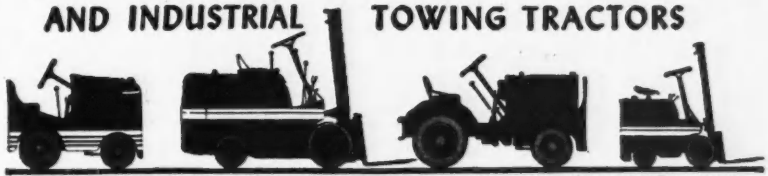
A third potent advantage springs from the maximum interchangeability of parts perfected by Clark. Insofar as is possible, parts used in electric trucks are identical with similar parts of gas powered trucks—a source of important savings to Clark users.

The fact that "Clark builds both" is worthy of repetition, and you realize why. Clark's recommendations are unbiased. You get wholly objective counsel concerning your operations and the types of machines that will serve you most efficiently and economically. Here, indeed, is a good recommendation!—CONSULT CLARK.

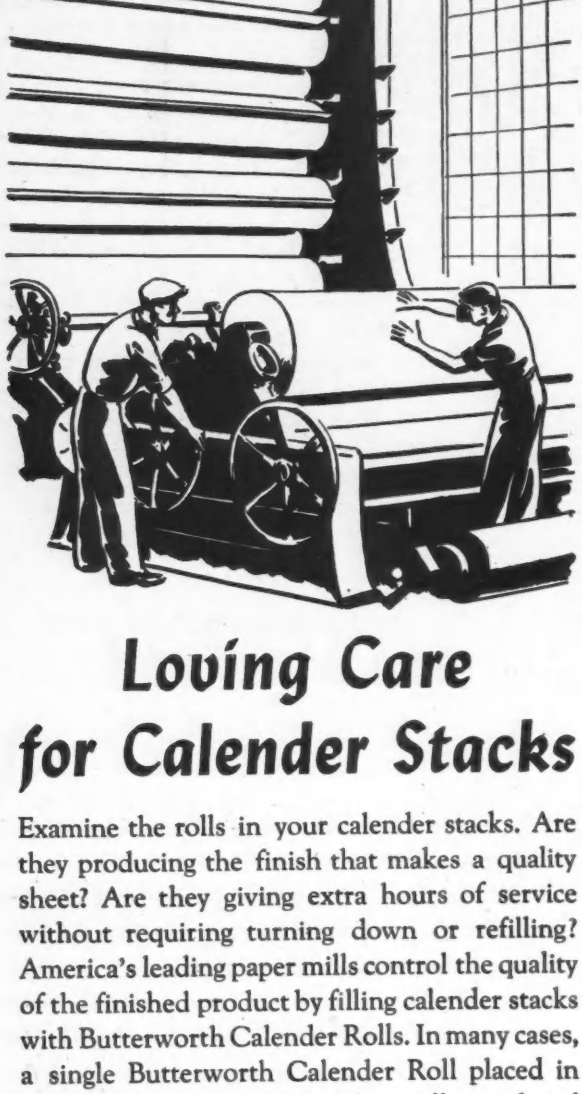


How to cut handling costs "to the bone"—in one easy picture-lesson.

CLARK GAS AND ELECTRIC POWERED FORK TRUCKS AND INDUSTRIAL TOWING TRACTORS



CLARK EQUIPMENT COMPANY, TRUCTRACTOR DIVISION, BATTLE CREEK 58, MICH.
REPRESENTATIVES IN PRINCIPAL CITIES THROUGHOUT THE WORLD



Loving Care for Calender Stacks

Examine the rolls in your calender stacks. Are they producing the finish that makes a quality sheet? Are they giving extra hours of service without requiring turning down or refilling? America's leading paper mills control the quality of the finished product by filling calender stacks with Butterworth Calender Rolls. In many cases, a single Butterworth Calender Roll placed in the calender stacks with other rolls produced such superior results that these mills standardized on Butterworth Calender Rolls. They realize that the finish on the paper can only be as good as the rolls in the calender. Butterworth Calender Rolls are furnished new or refilled for any make calender. Write us today.

For full information, write or call H. W. Butterworth & Sons Company, Philadelphia 25, Penna. — Providence Division, Providence, R. I. : : Charlotte, N. C., 1211 Johnston Building In Canada—W. J. Westaway Company, Hamilton, Ontario

Butterworth Calender Rolls

DIGESTED

Many American factories, including some in our own company, are located in small communities selected because of proximity to the source of raw materials. In many cases the bulk of the community's income is derived from its factory and the prosperity of the town and its inhabitants depends upon continued productivity.

If you fail as sales representatives your failure is reflected in reduction of production, a factor that touches the financial welfare of these factory employees. This is a responsibility you must recognize and accept since these same workers make the goods which created your own jobs, and make your personal security possible.

You have added responsibilities to the trade, and through the trade, to the consumer. You are the expert to whom the trade looks for specialized advice on the products you handle, the quantities to stock and the best methods of promotion. It is your responsibility also to convince the trade, and through the trade the ultimate consumer, that purchase of company products is economically wise and that your services as a salesman are a definite asset.—ROBERT G. FAIRBURN, President Diamond Match Company. *From an address at annual sales convention.*

Production Ratio Report*

(Production as per cent of six-day capacity)

COMPARATIVE WEEKLY SUMMARIES

Current Weeks—1948		Corresponding Weeks—1947	
January 24	101.1	January 25	103.7
January 31	103.6	February 1	104.0
February 7	99.2	February 8	106.2
February 14	100.5	February 15	104.5
February 21	99.4	February 22	105.9
February 28	*102.1*	March 1	108.5

COMPARATIVE MONTHLY SUMMARIES

1947						1948	
Jan.	102.1	May	106.2	Oct.	109.5	Jan.	100.9
Feb.	105.9	June	106.0	Nov.	109.3	Feb.	*100.3*
Mar.	106.1	July	93.5	Dec.	101.5		
Apr.	105.1	Aug.	104.2				
		Sept.	102.0	Year Avg.	104.3		

COMPARATIVE YEARLY SUMMARIES

	1941	1942	1943	1944	1945	1946	1947	1948
Year to Date	87.8	104.0	88.2	88.4	87.9	95.2	104.6	*100.6*
Year Average	97.4	90.4	87.8	88.1	89.4	101.1	104.3	

NOTE: *As of January 10 capacity base increased by 13.3%.*

PAPERBOARD OPERATING RATIOS†

Current Weeks—1948		Corresponding Weeks—1947	
January 24	104	January 25	101
January 31	103	February 1	102
February 7	100	February 8	104
February 14	101	February 15	102
February 21	99	February 22	103
February 28	*101*	March 1	102

Year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Year Avg.
1947	99	103	101	100	101	101	90	99	96	101	99	89	98
1948	99	*100*											

* Based on tonnage reported to American Paper and Pulp Association. Does not include mills reporting to National Paperboard Association, except in isolated cases where both paper and paperboard are produced and separate tonnage figures are not readily available. Does not include mills producing newsprint exclusively.

† per cents of operation based on "Inch-Hours" reported to the National Paperboard Association.

EDITORIAL

Prices

Because he spoke with the authority of a man who has built his company's success on a sound understanding of economic trends; because his company represents a type of user which takes in practically all of the paper industry's output, and because his remarks were laid before a group of industry's most influential marketing minds, the view of Jay D. Runkle are worthy of a more specific study by those who guide the policies of the paper industry. "Prices—Where Do They Go from Here," was the subject assigned for Mr. Runkle who is general manager of Crowley Milner & Company, Detroit, and chairman of the board of the National Retail Dry Goods Association. He delivered his talk on Thursday of this week at the national marketing conference of the Chamber of Commerce of the United States in St. Louis.

It is sudden great movements of prices, up or down, said Mr. Runkle that cause tremendous economic, social, and political upheavals. We can control our business cycles, our ups and downs in prices and business if we are intelligent enough and unselfish enough. There is no reason why we cannot stop the inflationary spiral and bring prices into reasonable readjustment without the crack-up that is so much discussed and feared. We must learn to use our heads instead of being ruled by our emotions and selfish interests.

The trends at present, he found, are mixed and confusing. While the prices of farm commodities and products made from such commodities have been dropping rather sharply, the prices of textiles, steel, and other products have been rising. For instance, woolen textile mills recently announced increases in prices on new fall lines up to 15 per cent. Meanwhile steel mills announced an increase in steel prices which will undoubtedly affect many products made of steel.

We are witnessing many strange phenomena in the various merchandise markets. Business has been relatively slow both at the wholesale and retail level for several weeks, and yet the prices in most markets are strong, and actually going up in many cases. Higher prices are being planned by most manufacturers of textile goods for fall 1948.

The situation calls for the most intelligent kind of cooperation between management and labor to bring about a gradual and orderly readjustment of prices through the reduction of the costs of production and distribution. Neither management nor labor can do this alone, but certainly there is enough at stake for both to make every effort to solve this most pressing problem.

Prices are results, said the speaker, and not causes. No good economic doctor would think of trying to treat anything but the causes of our troubles. Nothing is accomplished by trying to control results or effects. The causes of high prices must be found, and controlled or corrected. Prices are the results of the workings of the Law of Supply and Demand. When demand for goods is high and the supply of those goods is low, prices are high, and keep going higher as the demand grows greater, unless the Supply is greatly increased to offset this increased Demand.

It must be evident how wrong it is to try to regulate prices which are nothing but the results of other economic forces. If we really want lower prices, we must increase the supply of goods through greater production, and restrict demand through control of the amount of currency in circulation and the amount of credit available for use in buying consumer goods. But people like to have lots of money around, like the Chinese who now have so much money, paper money, that a Thousand Dollar Bill is worth one-third of a cent in American money. People just cannot have lots of money around and have low prices at the same time, unless there is a tremendous supply of goods available.

River Power Control

Strong opposition of the Federal Power Commission and other Federal agencies developed against the so-called Tidelands Bill, S. 1988, when the Senate Judiciary Committee began consideration of the measure which in effect, would give State authorities wider powers over hydro developments along navigable streams, as opposed to Federal control.

The Federal Power Commission, among others, filed objections to the bill, as to specific provisions reserving to the States, as against Federal authority, control over "land beneath navigable waters." Opposition also came from the Interior Department, the War Department, the Justice Department, and from others. However, representatives of various States' agencies appeared in favor of the legislation.

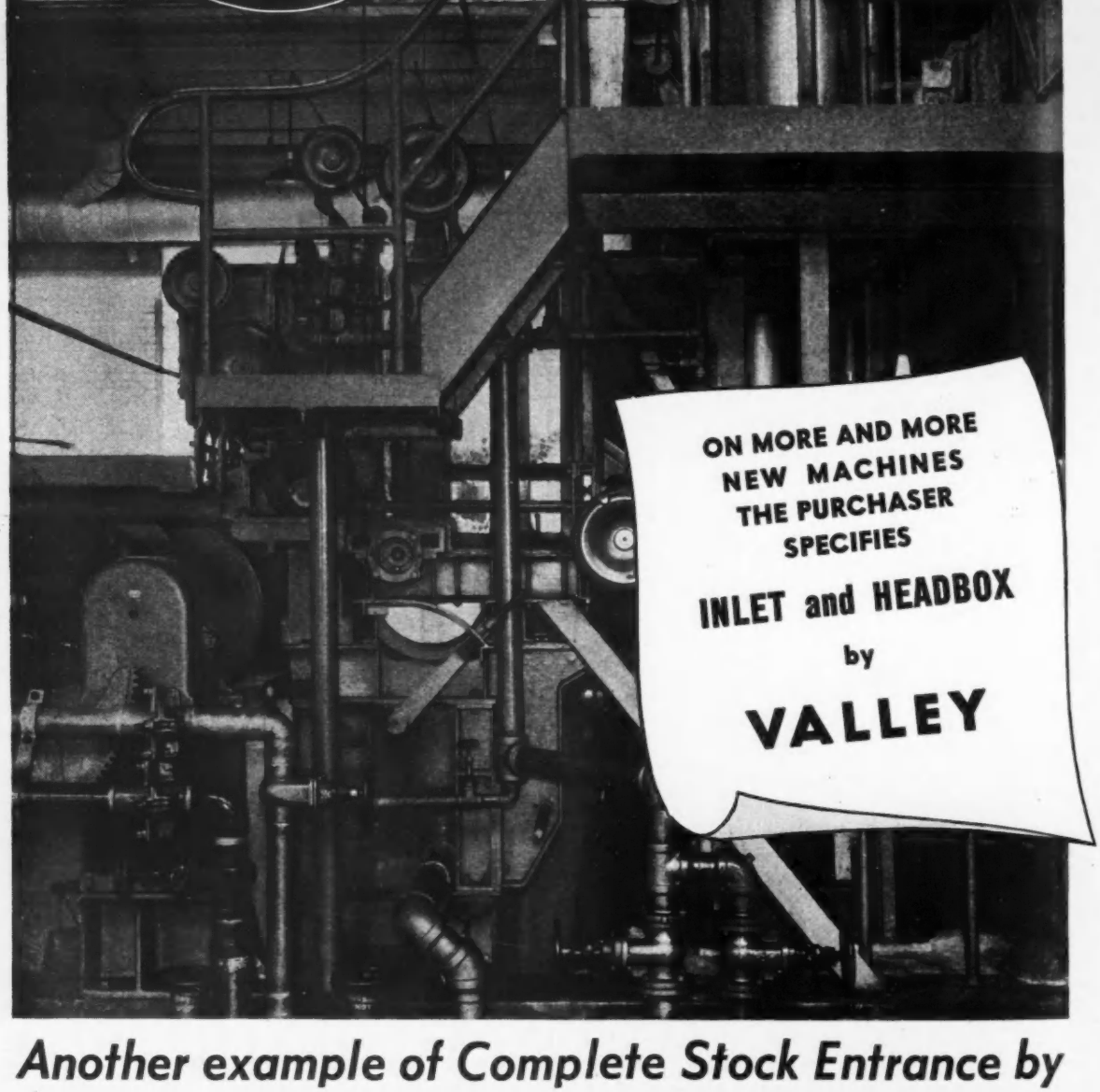
Later, indirectly, it was reported that the President would veto the bill if passed in its present form. It has been vetoed once previously.

Apparently Federal agency opposition to the bill stems from their construction of it to mean that States could cut deeply into present Federal jurisdiction over hydro or other water uses of navigable streams. As the Supreme Court in a recent decision, opened a rather broad conception of what constitutes "navigable waters" and the bill as now drafted might narrow this meaning again, from the States' view, more than usual interest has been focused on it.

W. L. Cook

Editor

Nowhere else
on a Papermachine
can
so small an investment
pay
such big dividends



ON MORE AND MORE
NEW MACHINES
THE PURCHASER
SPECIFIES

INLET and HEADBOX

by

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Another example of Complete Stock Entrance by

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Air view of St. Regis mill at Oswego, N. Y. The bag plant is in the foreground; roll storage building and paper mill are at the lake front toward the right; the machine shop is at left in the rear of the view.

St. Regis Integrates Its Plan For Multi-Wall Bag Output

When, in the early 1920's, a salt salesman, A. M. Bates, became impatient with the slow process by which it was necessary to handle the product he sold, he decided to improve conditions by building a machine to pack the salt in bags. Unfortunately, his machine failed to pack salt. While Mr. Bates was pondering changes in the machine to make it do the job for which he designed it, an executive of Universal Cement Company heard about the packer and requested permission to try it for cement. The results of this trial were so successful that Mr. Bates spent the remaining years of his life trying to make enough packers to satisfy the requirements not only of the cement industry but also many other industries whose products were granular or powdered.

Designed at first for filling open mouth cloth bags, the packer was soon modified for use in filling pre-tied cloth bags. This was really the original use of a valve bag, the valve in this instance being the pre-tied mouth through which the filling tube was forced. For the next logical step, use of paper bags, it was soon discovered that the valve arrangement was unsatisfactory when paper was substituted for cloth and also that bags composed of several layers of thin paper were much more satisfactory than bags made of a single heavy sheet. The side valve was developed and used in a multi-wall paper bag with both ends pre-stitched. This design is still being used, with modification and improvements.

While the bag was being developed it was also necessary to design machinery to manufacture the bags as well as to modify the packers to meet the changes.

Although Bates obtained patents on all of his packers, bag machines and the multi-wall bag itself, he apparently thought that the most important part of the business would be the manufacture of machinery for making and filling the bags. Initially, he confined his efforts to the development and manufacture of this machinery and licensed certain existing manufacturers of bags to make the new valve bag.

In the few short years from the time he made his first packer to the time of his death in 1927 he had built the business so successfully that it was sold in 1928 by his heirs to St. Regis Paper Company for over 20 million dollars.

St. Regis realized that the big potentialities in the business were probably in the production of the bags rather than in the manufacture of the machinery. However, it was decided to build a new machine shop at Oswego, New York, to house all of the machine building operations which were then moved from Chicago.

The new shop, which started operation early in 1930, consists of one main building 200 ft. wide by 320 ft. long, containing innumerable lathes, boring mills, shapers, milling machines, planers, gear cutters, gear hobbers, drill presses and a few special machine tools.

There is a separate air-conditioned room where all of the grinding is done. The air which is sucked from a hood surrounding each grinder is filtered several times to remove all of the abrasive grit and dust.

There is also a separate forge shop containing power hammers and punch presses in addition to the regular facilities for hand forging.

The main machine shop room is arranged in production lines insofar as is practical. The shop contains no foundry so all of the castings are made by outside foundries. These castings are machined and then moved down the line where various parts are manufactured and incorporated in the assembly. The finished machines are spray painted in a paint shop equipped with the most modern equipment including a booth with a water spray curtain, which carries away spray and fumes.

At present this machine shop employs 350 men and women working two shifts, and produces 40-60 packing machines per month, in addition to building various machines for manufacturing the bags and printing presses for reproducing the various advertising and descriptive designs which appear on the finished bags.

The machine division has a large engineering department which is responsible for developing new packers that will handle any dry, powdered or granular material not already being packed in valve bags. At present more than 200 different products are handled successfully. The engineering department also takes care of routine design and improvement of the present packers and bag making machinery.

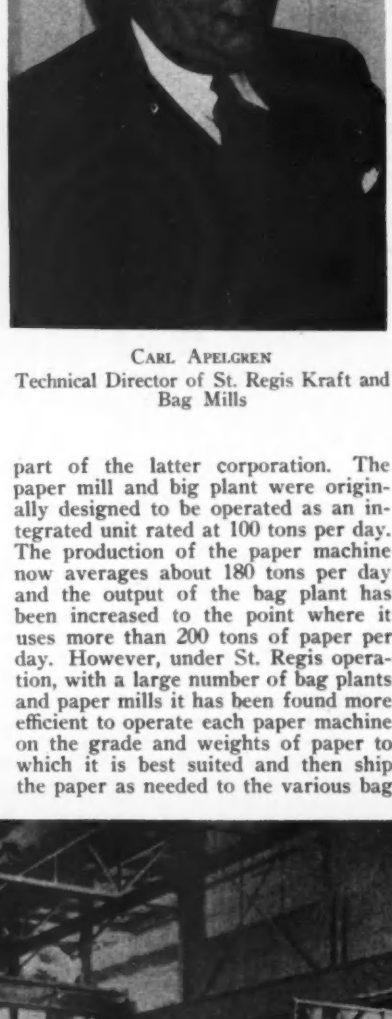
Several mechanical principles are

used in the feeding mechanisms of the various types of packers. Some types of materials require worm feeds, other materials are fed into the hollow rim of a revolving wheel enclosed by a canvas belt carrying the product to the packing nozzle. However, all of the packers are equipped with automatic weighing devices which shut off the flow when the amount of material in the bag reaches a pre-determined weight.

As an example of the wide variety of products now being packed in valve bags, a list of the products for which packers were made during the first half of 1947 is shown below:

sugar	stucco
wood sugar	zinc sulphate
flour	zinc oxide
alfalfa meal	ore oxides
mineral feed	sodium silicate
dried bone	flue dust
soya meal	limestone
feldspar	cattle spray
sulphur	poultry grits
polystyrene	powdered paint
salt	dry resin adhesive
clay	miscellaneous pigments
alum	polyvinyl chloride
lime	sodium carbonate
borax	vitreous enamel frits
cement	diatomaceous earth
silica	sodium bicarbonate
talc	cellulose acetate
plaster	phthalic anhydride
	calcium arsenate

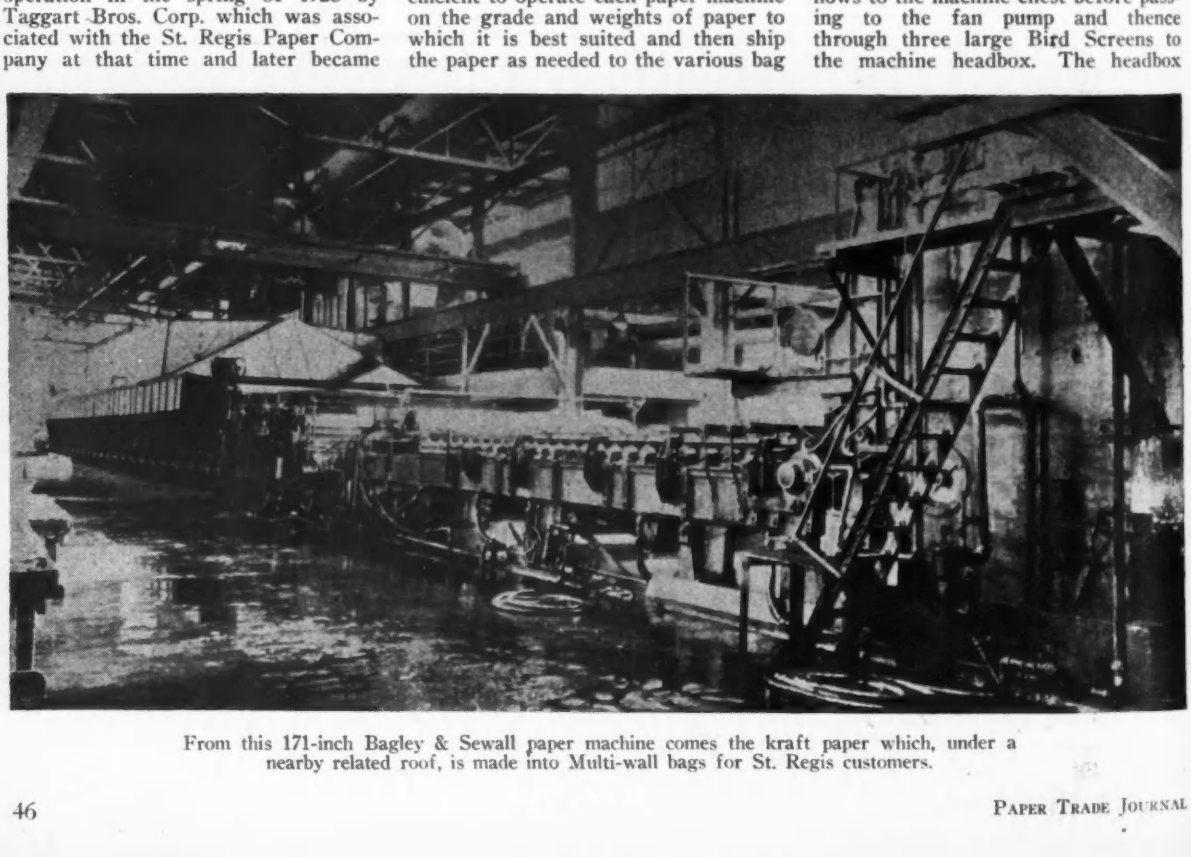
The paper mill and bag plant at Oswego were completed and put into operation in the spring of 1928 by Taggart Bros. Corp. which was associated with the St. Regis Paper Company at that time and later became part of the latter corporation. The paper mill and big plant were originally designed to be operated as an integrated unit rated at 100 tons per day. The production of the paper machine now averages about 180 tons per day and the output of the bag plant has been increased to the point where it uses more than 200 tons of paper per day. However, under St. Regis operation, with a large number of bag plants and paper mills it has been found more efficient to operate each paper machine on the grade and weights of paper to which it is best suited and then ship the paper as needed to the various bag plants. Under this method of operation part of the production of the paper machine at Oswego is shipped to the other bag plants and part of the paper required by the Oswego bag plant is shipped in from other paper mills.



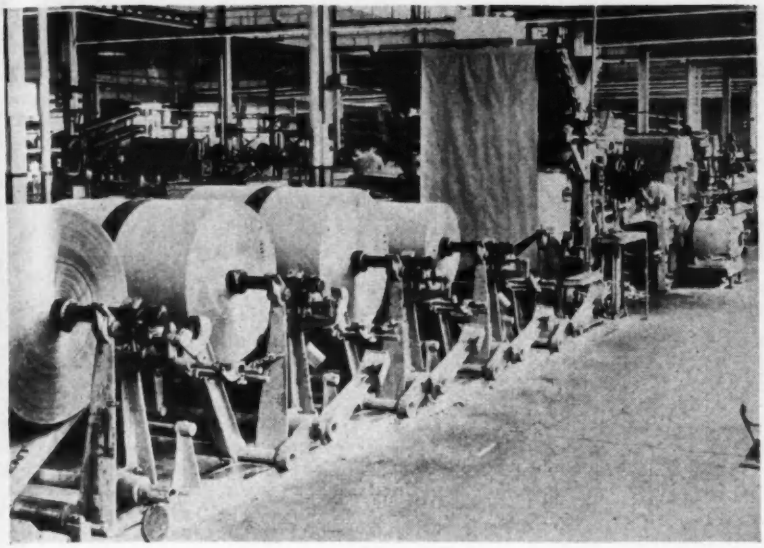
CARL APELGREN
Technical Director of St. Regis Kraft and Bag Mills

When the paper mill was originally built it had 20 beaters, each with a capacity of about one ton of dry pulp. This allowed a beating cycle of about five hours. The mill was designed to use Swedish unbleached kraft pulp in bales, which at that time made the best paper for multi-wall bags. The sheets of baled pulp were fed directly to the beaters.

The mill is still using Swedish unbleached kraft pulp but the methods of stock preparation have changed considerably. The baled pulp is now brought in directly from freight cars, or an adjacent warehouse, on jitneys. The baling wires are cut and the bales are placed on a conveyor which carries them into a 20 ft. diameter Hydrapulper. This unit easily disintegrates 200 tons of baled pulp per 24 hours a day and it is estimated that it will probably handle a maximum of 300 tons in 24 hours. The disintegrated pulp is removed continuously through a perforated plate and is then thickened to about 5.5 percent on vacuum thickeners before being passed through three Shartle refiners operating at 400 rpm with 450 hp motors. The refined stock is stored in a large chest and then diluted to 4.5 percent consistency as it is passed through 5 Jordans arranged in 2 parallel groups of 2 in series and 3 in series. The stock then flows to the machine chest before passing to the fan pump and thence through three large Bird Screens to the machine headbox. The headbox



From this 171-inch Bagley & Sewall paper machine comes the kraft paper which, under a nearby related roof, is made into Multi-wall bags for St. Regis customers.



From the four rolls of this five-roll tuber machine at Oswego paper is assembled into a four-wall bag

and slice are comparatively new, having been installed within the past few years by Valley Iron Works. The paper machine itself, although almost 20 years old, makes a very excellent quality of bag paper at a rate almost twice as great as it was originally designed for. The wire is 171 in. wide and 90 ft. long and makes a trimmed sheet 158 in. wide at the rate of 1140 ft. per minute. The press section includes one Downingtown suction couch and two Downingtown Suction Presses with first and second press felts. The machine has 42 dryers 60 in. diameter by 168 in. face and one baby dryer 36 in. x 168 in. and four felt dryers 48 in. diameter by 168 in. face. The dryers are equipped with two top felts and two bottom felts.

The single calender stock consists of one 28 in. diameter bottom roll, one 20 in. diameter roll and six 14 in. rolls. The winder is a Cameron No. 19 and has a top web speed of 3000 ft. per minute. From the winder the rolls are moved to the roll storage loft between the machine room and the bag plant. This loft will accommodate several thousand tons of paper. The rolls are handled very conveniently by means of a large overhead crane.

Several improvements are planned for this paper mill but the production has been so urgently needed that any new installation requiring the paper machine to be shut down has been postponed until this spring when the new St. Regis mill at Cantonment, Fla., will start operation.

The following changes will be made at that time: (1) The present mechanical drive having a top speed of 1140 fpm. will be replaced by a General Electric Sectional drive with Amplidyne Control. The top speed will then be more than 1500 fpm. (2) A new headbox will be installed to supply the additional stock required by the increased speed. (3) The present fan pump which has a capacity of 10,000 gpm. will be replaced by a new Ingersoll Rand pump having a capacity of 20,000 gpm. (4) A new Jones Leviathan Jordan equipped with a 700 hp. motor will be installed supplying the additional 20 to 40 tons of stock per day required by the increase in speed. Another Jones Majestic Jordan has also just been installed and will soon be in operation. With this extra stock preparation capacity plus additional storage chests it is expected that the stock preparation equipment may be operated 16 hours daily to produce enough stuff for 24 hour operation of the paper machine. Shutting down this equipment during the 8 hours when electric usage is at its peak will produce considerable savings in power costs.

One of the most important parts of a multi-wall bag plant is the design and printing department. This is where the advertising designs, trade marks, et cetera, which appear on the outside of most of these containers, originates. Of course, the design is not necessarily original at this point as many are modifications of smaller or larger models or combinations of several other models. However, the complete design as printed here must be drawn to fit the size of the bag for which it is required. This job requires the services of several commercial artists, in addition to a photographer and assistant.

Although the designs are comparatively simple, the job of printing on the kraft bag paper is much more difficult than printing on book paper. Since the bag paper must be made with high strength as the primary requirement, the printing surface is necessarily much rougher than that of paper which is made primarily for printing. Although letterpress printing is used, the metal plates normally used for this type of printing produce unsatisfactory results. However, printing from a rubber mat gives sufficient resiliency to produce excellent results even on rough surfaces.

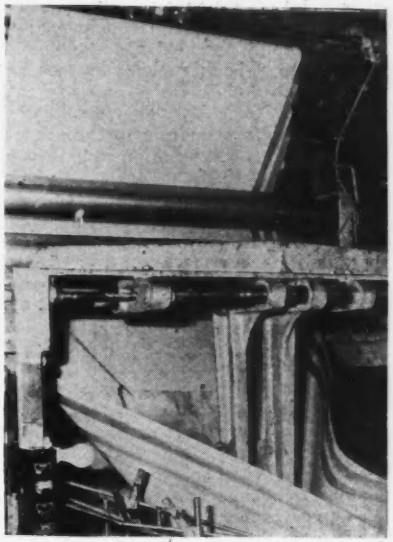
The rubber printing mat may be cut by hand or the design may be molded into a piece of rubber which is then vulcanized onto the large printing mat.

When molded forms are used the design must first be put into a metal plate which may consist of a line cut, photo-engraving, linotype or hand set type or any combination of these. This metal plate is then imprinted into a thermo-setting plastic matrix. After this matrix has been properly cured it may be used to mold the rubber mats in almost unlimited quantity. The rubber printing mats are usually good for about one-half million printing impressions before wearing out.

The actual printing operation takes place on the paper used for the outside wall, before the bag is made rather than on the finished bag. Usually, the paper is printed and rewound into a roll which is then sent to the "tuber," the first machine in the bag making operation. However, some "tubers" are equipped with a press for printing the outside wall just before the "tube" is formed.

The "tuber" is probably the most important machine in the bag forming operation. It is equipped with reels to hold several rolls of paper, one roll for each wall of the bag. These machines will make tubes containing from one to five walls. Sometimes, each wall will be a different grade or weight of paper but usually two or more walls may be made from the same kind of paper. However, each wall must always come from a separate roll of paper.

As the webs of paper are unwound from the rolls they are first formed into a flat pack with the sheet edges



The tube is formed as four layers of paper, staggered and glued at their edges, come from the tuber.

staggered about 2 inches between each sheet. A line of adhesive is applied near one edge of each sheet. The whole pack is then bent into the form of a tube with the adhesive on the staggered edges of each sheet, on one side, meeting the opposite edge of the same sheet. The tube is then flattened and pressed to seal the adhesive. A notch is pressed into each side at the same time. This notch eventually forms the side walls. The result is a continuous composite, flat tube which really consists of several complete tubes, one within the other, the number, of course, depending upon the number of walls in the bag. This composite tube is immediately cut into the proper lengths by a revolving cutter. A conveyor carries these lengths of tubing, which are now multi-wall bag bodies, to another machine which notches and folds the valve in the side. An additional piece of paper forming part of the valve is also inserted at this time.

The next operation consists of folding and sewing the ends to make a complete enclosure except for the valve opening. Heretofore, it has been necessary to sew each end separately. However, the St. Regis Machine Division has just completed a new stitcher which sews both ends simultaneously.

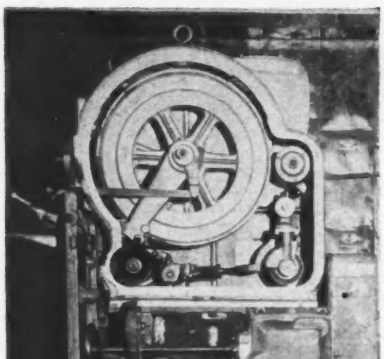
During the war, the sewn ends of many of the bags for military usage were dipped in a waterproofing compound to increase the water resistance of the finished package. However, for most commercial uses it has been found that this operation is unnecessary.

Although the paper mill at Oswego is located directly on the lake shore it has not been possible to use water transportation because the Oswego Harbor does not extend to this point. However, U. S. Army Engineers have requested funds for extension of the present breakwater at the mouth of the Oswego River so that the shore adjacent to the paper mill will be included in the harbor. It is also recommended that the entire harbor be dredged to a depth sufficient for ocean freighters.

The St. Regis Paper Company has also agreed to cooperate to the extent of spending a half million dollars for the construction of a terminal dock and warehouse to handle incoming shipments of wood pulp for all paper mills in Central New York State.

When this project is completed pulp shipped from Scandinavia or our own West Coast will be received at the Oswego dock for the same price that it is now received at the ports of New York or Albany.

Considerable progress was made during the war in the development of watertight multi-wall bags. Thousands of these bags were made for the Armed Services to be used under the extreme conditions encountered in South Pacific warfare. The use of paper with a very high degree of wet strength became quite commonplace. In fact this type of paper is still used to a great extent for peace time bag manufacture.



A valve bag backer, almost completed, with its hollow-rim wheel that carries the material to be packed, delivers it to feeder spout shown at left. Platform at lower left is a scales mechanism.

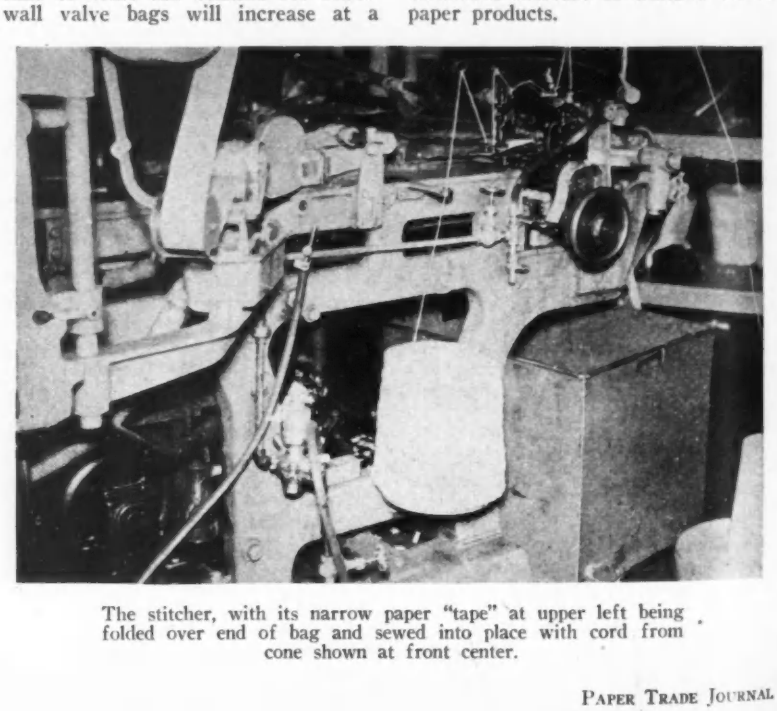
The manufacture of synthetic rubber introduced a new use for multi-wall bags, since all this material must be stored in unit packages to prevent flowing together into one large mass. At first corrugated cartons with special liners were used. However, a rubber repellent coating applied to the inner wall of multi-wall bags made it possible to use this type of container in place of the cartons. These bags proved to be the most satisfactory type of container for Buna-S synthetic rubber and are still being used.

There is little doubt that for some time to come the demand for multi-wall valve bags will increase at a rate greater than the facilities for manufacture can be added. More and more industries are discovering the overall economy of using automatic packers and valve bags. Added to this is the definite preference of users for the non-returnable paper bags as against cloth bags which must be returned to the supplier or re-sold for other use to keep the cost within reasonable bounds.

Health departments of many states have made the use of single-service paper bags mandatory for food products because of the cleanliness and protection afforded by these containers. It is expected that eventually the conversion to multi-wall bags for foodstuffs will be almost 100 percent.

The tremendous expansion of the multi-wall bag industry is just one result of the remarkable changes in distribution that have been taking place in this country since the first world war. At that time most of the dry granular products were sold to the retail consumer in bulk. The most common methods of shipping these materials in wholesale quantities were in barrels, cloth bags or bulk in freight cars.

The first change in packaging occurred at the retail level. The changes were gradual but continual. Meanwhile the changes in wholesale packing and shipping tagged along several years behind. However, World War II gave considerable impetus to the use of disposable paper containers for packaging large quantities of materials for wholesale distribution. The next few years should see a continuance of this expansion until every product that may conceivably be shipped in paper may be packed in paper at the factory for both small and large quantity consumers. This in turn should insure a continued increase in demand for all paper products.



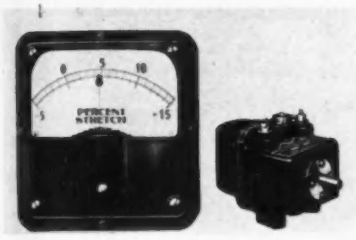
The stitcher, with its narrow paper "tape" at upper left being folded over end of bag and sewed into place with cord from cone shown at front center.

EQUIPMENT AND SUPPLY

Speed-Ratio Tachometer Measures Stretch Percent

NEWARK—To provide more accurate control in processes wherein materials are subject to change due to differences in the rate of travel, the Speed-Ratio Tachometer has been developed by Weston Electrical Instrument Corporation, 617 Frelinghuysen Avenue, Newark 5, N. J.

The Speed-Ratio Tachometer includes a special speed-ratio indicating instrument which operates in conjunction with two small d-c generators connected to the input and output drives of the machine and wired to the ratio indicator, convert mechanical rotation into measurable electrical quantities.



The indicator or ratio meter is calibrated in whatever terms are desired, such as percent stretch, shrinkage, elongation, et cetera, and can be mounted at any position most convenient for easy reading. Where required an additional indicator can be wired into the circuit for use at a distance. If desirable, one or more indicators calibrated in production terms, such as "Yards per Minute" may be connected to the output tachometer generator.

Typical of the many operations to which the Weston Speed-Ratio Tachometer is now being applied is that of indicating the speed ratio of rolls in making crepe paper.

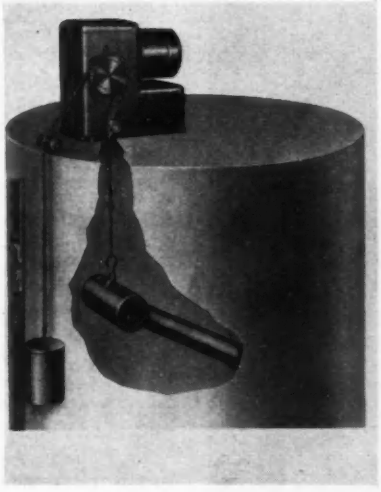
Transparent Liquid Skin Makes Industrial Debut

NEW YORK — Metal, wood, leather and fabric surfaces can now be protected from corrosion and deterioration by a new transparent liquid "skin" called Permacote which is being introduced to the industrial world for the first time, according to a statement of its manufacturer, State Chemical Corporation, 1265 Broadway, New York 1, N. Y.

Designed for use on surfaces which require protection from moisture, acids, alkalis, alcohol, dyes, dirt, dust, etc., the new versatile protective coating can easily be applied by brush, spray or dip, and forms a tough transparent coating which remains permanently flexible and is highly resistant to abuse by either physical or chemical means. The new product also is resistant to extremes of heat or cold and will not crack or chip in spite of the expansion or contraction of the surface it protects. It imparts a lustre to any surface it is applied to and effectively seals in and prolongs the life of ordinary paints, lacquers and varnishes. Available in one and five gallon cans as well as in 50 gallon steel drums.

Liquid Chemical Feeding Advanced By Liquon

NEW YORK — A new liquid chemical feeder with several advances over previous designs of feeding devices has just been developed by Liquid Conditioning Corporation to be known as the Liquon Decantrol. A primary application of this apparatus is to feed chemicals either in solution or in suspension (slurry) form to water that is to be chemically treated for softening or clarification, the unit being equally adapted to either constant rate or proportionating rate control systems of chemical feed.



The Decantrol is a totally-enclosed motor-operated gear-reduction unit of special design mounted on the top of a chemical feed tank. A feeding sprocket engages with a chain, one end of which is connected to the drawoff head of a decanting pipe. The other end of the chain is connected to a level-position indicator which rises as the decanting pipe is lowered. Important improvements embodied in the device are said to be that it does not require manual raising of the decanting pipe after the chemical feed tank is empty, since the motor which lowers the top of the decanting pipe also raises the top; a signal lamp lights up during the raising operation, going out when the decanting pipe is at the top position to notify the operator that the tank is ready for recharging; use of a chain and sprocket instead of a cable and drum for controlling the drop of the decanting pipe assures positive non-slip feeding and eliminates error due to improper winding of a cable on a drum; minute or large changes in the feeding rate are easily and quickly made by an adjustable micrometer dial on the reset timer which can be located at any convenient place; remote electrical control permits the meter to be located wherever desired, and also permits greater meter accuracy by eliminating the load on the meter; its synchronous motor assures accurate maintenance of feeding rate.

Further information from manufacturer, Liquid Conditioning Corporation, Dept. PT, 114 East Price Street, Linden, N. J.

Handee Drafting Eraser Electrically Driven

CHICAGO—Balanced and shaped to fit the hand for pencil-point precision, its total weight but twelve ounces, an electrically-driven eraser for making sharp clean erasures on tracings or drafting room copies by a modern, high-speed method has been marketed under the name "Handee" by Chicago Wheel and Manufacturing Company, 1101 West Monroe Street, Chicago 7.

All moving parts except the rubber eraser are described as completely covered by the exclusive patented protective sleeve which fully protects the fingers. Its motor is the same reliable unit utilized in the "Handee" tool, but optional equipment can be provided in an easy-to-operate foot control which permits freedom of the hands for handling the eraser and foot control of speed in "on" and "off" positions.

Paper Product Pointers
FROM CYANAMID

CASEIN
No. 1 Coating Agent

About half a century ago, casein was first produced in commercial volume. Since then it has remained unsurpassed among adhesives as a coating agent for paper—a binder that holds mineral pigment to the surface of the paper. Casein has strong binding power, water resistance and, in the case of Cyanamid caseins, both domestic and imported, it is readily available in unlimited quantities for paper manufacture.

Uniform Quality Essential

Absolutely uniform quality, such as is provided in Cyanamid caseins, is essential to the paper-maker. Satisfactory results in the coating of paper demand that he be able to rely implicitly on his casein supplier to give him the exact grade every time.

Paper-makers can rely on Cyanamid in another way, too. Since Cyanamid, in addition to its own ACCO** brand of domestic casein, is sole agent for the well-known DAIRYCO Brand of Argentine Casein, it can assure its customers a steady supply of this essential product even should the domestic market be restricted.

Wet Strength Facilitates Coating

When paper has been wet-strength treated prior to coating, it has three important advantages: "cockle" and curl are minimized in the sheets when formed; the better bonding qualities of wet-strength paper minimize protruding surface fibers and keep linting to a minimum; and wet-strength paper has potentially greater dimensional stability.

Cyanamid's PAREZ† RESIN 607 is ideal for imparting wet strength to raw stock base for best results in the coating process. It also aids in imparting strength to stock without excessive beating, thus minimizing adverse effect of gelatinization on the expansivity, distortion, curling, etc. of the paper.

ALWAX** Sizes • WAXINE* Sizes • Rosin Size • PAREZ* Resins Synthetic Resins • Casein • Alum • Sulfonated Oils • Fillers Defoamers • Soda Ash • Caustic Soda • Salt Cake • Acids • Clays AEROSOL* Wetting Agents • CAL MICRO** (Calcium Carbonate) and other Paper Chemicals. For low-cost chemical equivalent of distilled H_2O . . . Filt-R-Stil* Demineralizing Units. *Reg. U. S. Pat. Off. **Trade-mark

†Trade-mark of American Cyanamid Company covering its synthetic resins for use by the paper industry. The processes under which PAREZ is applied in the production of wet-strength paper are covered by U. S. Patents Nos. 2,291,079, 2,291,080 and 2,345,543 and U. S. Patent Application Serial No. 453,032.

American Cyanamid Company
Industrial Chemicals Division
30 ROCKEFELLER PLAZA, NEW YORK 20, N. Y.

SALES OFFICES: Boston, Mass.; Philadelphia, Pa.; Pittsburgh, Pa.; Baltimore, Md.; Charlotte, N. C.; Cleveland, Ohio; Cincinnati, Ohio; Chicago, Illinois; Detroit, Mich.; Kalamazoo, Mich.; St. Louis, Missouri; Los Angeles, Calif.; San Francisco, Calif.; Seattle, Washington
In Canada: Dillons Chemical Co., Ltd., Montreal and Toronto.

SECTION OF THE

TECHNICAL ASSOCIATION
OF THE PULP AND PAPER INDUSTRY

122 E. 42nd ST., NEW YORK 17, N. Y. Edited By R. G. MACDONALD, Secretary

Systematic Operation of Construction and Maintenance Departments*

By C. Lee Dryden[1]

Abstract

The well-known higher costs of today for construction and maintenance work in mills require that methods of operation be introduced to take advantage of every cost saving possible in operating these departments. In order to know what and where these costs are and to have the machinery to eliminate or reduce them to reasonable operating standards, the construction and maintenance forces must first be properly organized with clearly marked lines of authority and responsibility of supervision from management level down to the newest apprentice or helper. Second, after being satisfactorily organized, the departments must be operated in accordance with the organization plan. Third, with the departments properly organized and job descriptions, duties, and responsibilities known by all of its personnel, the organization must then be integrated by a system of operation and furnished with working tools consisting of forms and records as are explained.

The organization of a plant's engineering force can consist of a department containing separate divisions for construction and maintenance functions. In larger mills and plants this is sometimes a practice. If this be the case, these functions must be separated by a clear line of demarcation, each with its own supervisory head, subordinate supervision, and personnel organized along lines similar to the conventional divisions of engineering and operating functions of the engineering department as shown on Fig. 1.

This organization chart contains the position of a dispatcher who reports directly to the operating head of the department, whether this head be chief engineer, plant engineer, works engineer, etc. The dispatcher is a key figure in the systematic operation of construction and maintenance work. In the absence of a full-time dispatcher, the dispatcher's position may be filled by the plant engineer or any other individual designated by him to handle the dispatcher's duties.

Figure 2 shows an organization chart of an engineering department for a smaller mill or plant or one where construction work may not be the major factor as indicated on Fig. 1. This department has its construction and maintenance functions integrated as a single division. Figure 2 also contains the position of dispatcher which is equally as important as that shown on the first organization chart. This chart shows a sectional breakdown which is contained but not illustrated in the first chart of the sub-division of crew chief or group leader. The group leader may be defined as a superintendent, foreman, assistant foreman, shift boss, chief mechanic, or any other person placed in direct charge of working personnel, such as pipefitters, electricians, carpenters, painters, etc., of the trades and crafts necessary to carry on construction and maintenance work. He may be a working mechanic or a foreman.

There are, of course, exceptions to this where the plant is not large enough to support separate crafts. In

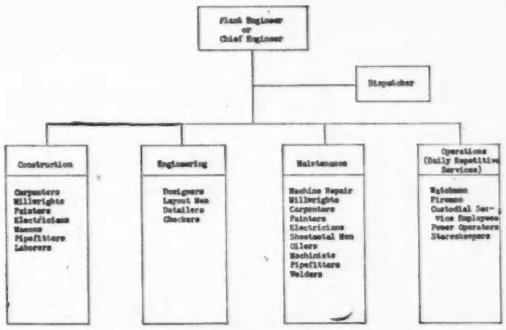


FIG. 1
Typical Engineering Organization with Separate Maintenance and Construction Divisions

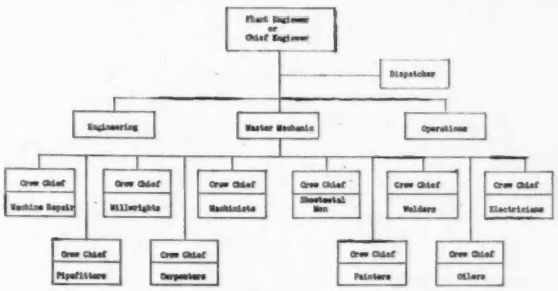
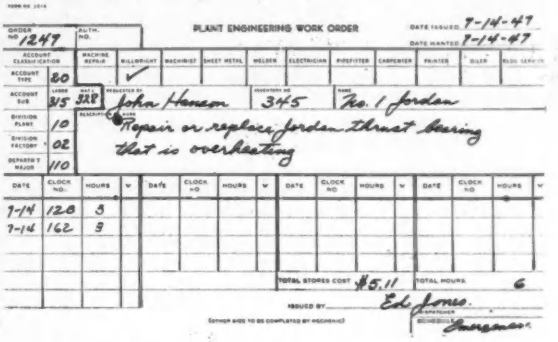


FIG. 2
Typical Engineering Organization with Integrated Maintenance and Construction Divisions

* Presented at the Second Engineering Conference sponsored by the Technical Association of the Pulp and Paper Industry held at The Bellevue-Stratford, Philadelphia, Pa., Nov. 3-5, 1947.

[1] Member TAPPI; Formerly Manager, Central Plant Engineering Dept., Marathon Corp., Menasha, Wis. Now Manager, Dryden-Harlan Electric Co., Inc., Appleton, Wis.

cases of this kind there is the plant maintenance mechanic who also does the carpentry, painting, millwrighting, and such duties as replacing light bulbs, etc. However, the type of mill using a general maintenance mechanic instead of separate trades or crafts is usually too small to warrant the installation and operation of the subject system and is expected from this discussion.



PLANT ENGINEERING WORK ORDER

ORDER NO. 1247 — DATE ISSUED 7-14-47 — DATE WANTED 7-14-47

ACCOUNT CLASSIFICATION: MACHINE REPAIR ✓ | MILLWRIGHT | MACHINIST | SHEET METAL | WELDER | ELECTRICIAN | PIPEFITTER | CARPENTER | PAINTER | OILER | ELEC. SERVICE

ACCOUNT TYPE 20 — LABOR 345 — MAT'L 328 — REQUESTED BY John Henson — INVENTORY NO 345 — NAME No. 1 Jordan

DIVISION PLANT 10 — DIVISION FACTORY 02 — DEPOSIT'S MAJOR 110 — DESCRIPTION Repair or replace Jordan thrust bearing that is overheating

DATE	CLOCK NO.	HOURS	✓	DATE	CLOCK NO	HOURS	✓	DATE	CLOCK NO	HOURS	✓	DATE	CLOCK NO	HOURS	✓
7-14	128	3													
7-14	162	3													

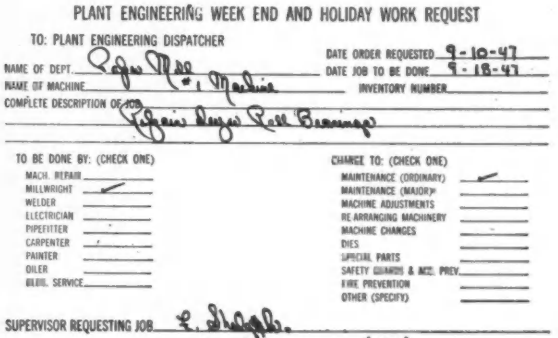
TOTAL STORES COST $5.11 — TOTAL HOURS 6

ISSUED BY Ed Jones — DISPATCHER — SUPERVISOR Foreman

(OTHER SIDE TO BE COMPLETED BY MECHANIC)

FIG. 3

Front side of Plant Engineering Work Order showing typical job completed by millwright and millwright helper



PLANT ENGINEERING WEEK END AND HOLIDAY WORK REQUEST

TO: PLANT ENGINEERING DISPATCHER

NAME OF DEPT. Paper Mill — DATE ORDER REQUESTED 9-10-47

NAME OF MACHINE #1 Machine — DATE JOB TO BE DONE 9-18-47

COMPLETE DESCRIPTION OF JOB Clean Dryer Roll Bearings — INVENTORY NUMBER

TO BE DONE BY: (CHECK ONE)

MACH. REPAIR	
MILLWRIGHT	✓
WELDER	
ELECTRICIAN	
PIPEFITTER	
CARPENTER	
PAINTER	
OILER	
ELEC. SERVICE	

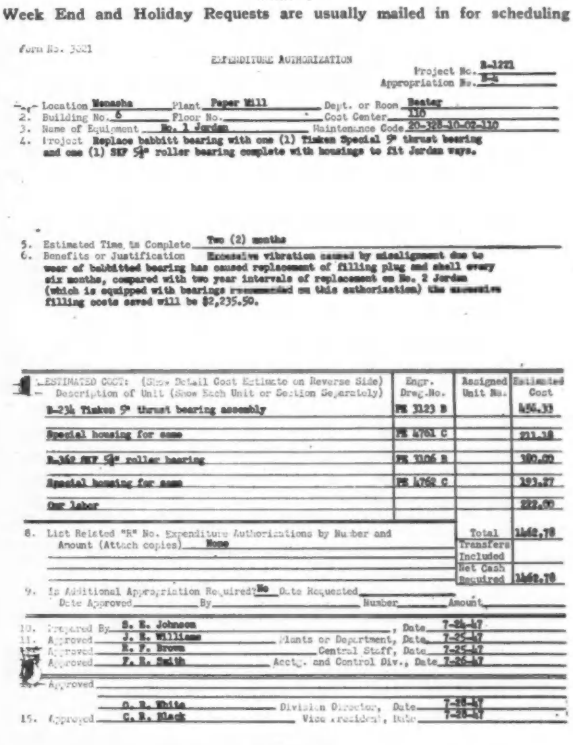
CHARGE TO: (CHECK ONE)

MAINTENANCE (ORDINARY)	✓
MAINTENANCE (MAJOR)	
MACHINE ADJUSTMENTS	
RE ARRANGING MACHINERY	
MACHINE CHANGES	
DIES	
SPECIAL PARTS	
SAFETY GUARDS & ACC. PREV.	
FIRE PREVENTION	
OTHER (SPECIFY)	

SUPERVISOR REQUESTING JOB F. Shipley. (40.6)

FIG. 4

Week End and Holiday Requests are usually mailed in for scheduling



Form No. 3021

EXPENDITURE AUTHORIZATION

Project No. B-1221
Appropriation No. B-5

1. Location Wenasha — Plant Paper Mill — Dept. or Room Beater
2. Building No. 6 — Floor No. — Cost Center 130
3. Name of Equipment No. 1 Jordan — Maintenance Code 20-328-10-02-130
4. Project Replace babbitt bearing with one (1) Timken Special 5" thrust bearing and one (1) SKF 5½" roller bearing complete with housings to fit Jordan ways.

5. Estimated Time to Complete Two (2) months
6. Benefits or Justification Excessive vibration caused by misalignment due to wear of babbitted bearing has caused replacement of filling plug and shell every six months, compared with two year intervals of replacement on No. 2 Jordan (which is equipped with bearings recommended on this authorization) the excessive filling costs saved will be $2,235.50.

7. ESTIMATED COST: (Show Detail Cost Estimate on Reverse Side) Description of Unit (Show Each Unit or Section Separately)	Engr. Drwg. No.	Assigned Unit No.	Estimated Cost
B-2¾ Timken 5" thrust bearing assembly	PE 3123 B		$56.33
Special housing for same	PE 4701 C		231.38
B-340 SKF 5½" roller bearing	PE 3106 B		180.00
Special housing for same	PE 4702 C		193.27
Our labor			222.00
		Total	1462.78
		Transfers Included	
		Net Cash Required	1462.78

8. List Related "R" No. Expenditure Authorizations by Number and Amount (Attach copies) None

9. Is Additional Appropriation Required? No — Date Requested — Date Approved — By — Number — Amount

10. Prepared By S. E. Johnson, Date 7-24-47
11. Approved J. K. Williams, Plants or Department, Date 7-25-47
12. Approved H. F. Brown, Central Staff, Date 7-25-47
13. Approved F. R. Smith, Acctg. and Control Div., Date 7-26-47
14. Approved
C. B. White, Division Director, Date 7-28-47
15. Approved C. B. Black, Vice President, Date 7-28-47

FIG. 5

Typical approved Expenditure Authorization for major repair job

Work Orders

With the organization ready for operation the next step is to introduce the work order form as one of its tools. The work order, Fig. 3, is always initiated by the dispatcher upon the request (usually telephoned to the dispatcher) of any authorized person in a production department or any other department of the mill or plant. The dispatcher shall receive all requests for construction, maintenance, repair, rearrangement, engineering, building service, lubrication, or any other work confined within the policies, work rules, job descriptions, duties and responsibilities of the engineering department.

Only in cases of extreme emergency such as fire, flood, etc., when the requestor cannot supply all the information required by the dispatcher should a work order be issued without complete answers to the following questions being supplied:

1. What is the requestor's name?
2. What is the inventory or unit number of the machine, equipment or item for which work is requested?
3. What is the location, name and description of the machine, equipment or item for which work is requested?
4. What is the full description of the work to be done?
5. If this is repair work, what is the known cause of the trouble?
6. What is the absolute maximum time in which this job can be scheduled for completion?

The dispatcher will receive all requests for weekend work on the "Plant Engineering Weekend and Holiday Work Request" (Fig. 4) by noon each Thursday. He shall submit these to the plant engineer for approval and scheduling.

The dispatcher will receive all calls for engineering service regardless of the cost of items involved. He will, together with the requestor, make a preliminary estimate of the job insofar as it is possible at the time the request is made. Should it be determined that the cost will not exceed established limits permitted for capital expenditure or for rearrangement, maintenance, or repair work and does not involve any engineering, he will issue a work order as requested.

If the dispatcher has determined that a job request will exceed work order cost limits or involves any engineering, he will refer it to the plant engineer and immediately inform the requestor of the action taken. Upon receipt of a request of this nature the plant engineer will review the request, survey the job, and take the necessary steps to enable conclusive action to be taken by having:

1. Necessary engineering work performed before issuance of a work order.
2. Assignment made to staff member of plant engineering department (equipment engineer, utilities engineer, master mechanic, etc.) for disposition.
3. Expenditure authorization showing estimated cost prepared and submitted for approval if justified (Fig. 5).
4. Work order issued by dispatcher.
5. Agreement with requestor upon postponement or cancellation of request if justified.

The dispatcher will issue separate work orders for each section, trade, or craft required to complete the request. For instance, a job requiring only electrical main-

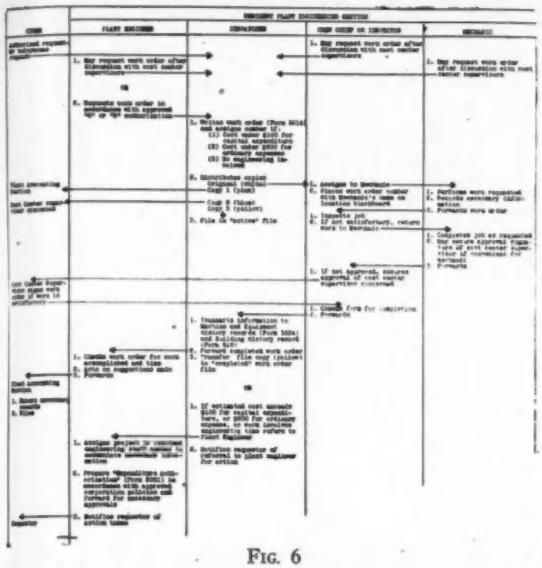


FIG. 6
Work Flow diagram showing dispatching and routing of Work Order and copies

tenance work will require a work order to be issued directly to the electrical section. A job involving more than one trade, such as rearranging a machine or equipment, may involve millwrights, electricians, and pipefitters. In this case, a separate work order will be issued each to the pipefitter, millwright, and electrical sections (in instances where one craft section requests minor work to be done by another, such as the machine repair section requests work to be done by the welding section, the work order issued to the machine repair section will be sufficient authority for the welding section to perform the requested work. In this case, however, the welding section mechanic doing the work will enter his clock number and time on the work order issued to the machine repair section). In cases where different sections are involved and more than one work order is issued for the same request, the first work order issued will carry the primary number for the first craft section. All following work orders for other sections for the same job will be secondary work orders. In cases of this kind, the first work order will carry the work order number with no other designation. All following work orders to other sections for the same job will carry the same work order number with the suffix "X". That is, a work order issued for the millwright section may be 14413 and the following work order for the same job issued to the electrical section will be 14413X. Should another Work Order be required for the Pipefitter Section for the same job, it also will bear the number 14413X and this number will be used for all following work orders issued to other sections for this job.

This system must be followed to permit the plant accounting department to segregate and keep together all costs for a single job. A job shall be defined as a total amount of all work being performed on a machine, piece of equipment, or item carrying a single inventory number, or general work for a cost center or on a single building or any part thereof. Where more than one inventory number is involved, separate work orders with separate work order numbers shall be issued for each inventory number. This is done to determine the cost accumulated against a single machine, part of a machine, piece of equipment, building, or part of a building, or any other item carrying a separate inventory number or other means of identification.

Work Order Distribution

The Work Order copies will be distributed by the Dispatcher as follows (Fig. 6): The original (white) will be issued to the crew chief of the section responsible for the work involved (Fig. 7). The first copy (pink) will be forwarded to the plant accounting department. The second copy (blue) will be forwarded to the supervisor of the cost center such as machine center, plant section, plant, factory, department, or division from which the request is received. This copy is a source of information to the cost center supervisor that the work order has been requested and is to be performed as indicated on the work order form. This copy should be filed in a current file until the job is completed. The third copy (yellow) will be filed in the dispatcher's "active" file and held in this file until the return of the completed original copy.

The crew chief shall generally receive the original work order form as filled out and issued by the dispatcher (Fig. 8). There may be times when a dispatcher will route the work order through the plant engineer, or a member of the engineering staff, for consideration or review of some unusual aspects of the job. The work order may be issued to an inspector when it is a pre-

FIG. 7
Crew Chief receives the original of Work Order. Note the pigeon-hole arrangement for transmission of Work Orders from Dispatcher

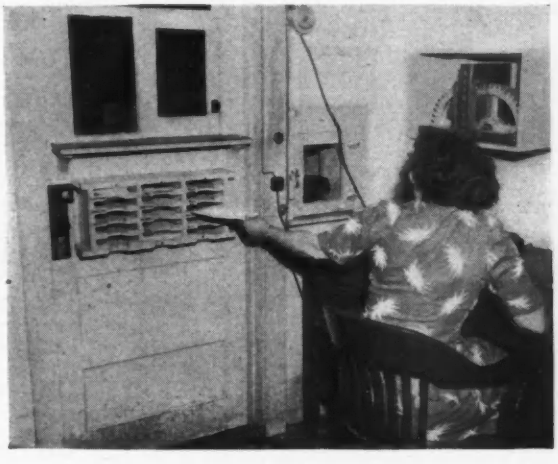


FIG. 8
Dispatcher issues Work Order to Crew Chiefs by way of this pigeon-hole arrangement

DO NOT ROLL OR FOLD ORDERS — STORES DEPT. — DO NOT ROLL OR FOLD ORDERS

ORDER ON STORES — Date 7-14-47

QUANTITY	DESCRIPTION	WEIGHT	PRICE	AMOUNT
1	Jordan thrust bearing	12#	$5.11	$5.11

CHARGE TO: REC. NO. R. Paper Mill; REC. NO. C. DEPT 110; WORK ORDER NO. 1247; EMERGENCY

CLASSIFICATION — MATERIAL — ACCOUNT TYPE — ACCOUNT SUB — WORKING PLANT — DIVISION FACTORY — DEPT MAJOR

MACHINE NAME No 1 Jordan — MACHINE NO. 345 — SIGNED BY Bob Smith

PERSONAL CHARGES—NAME — DEPT. — CARD NO.

FIG. 9

Typical Order On Stores requisition to be made upon receipt of Work Order. Weight, price and amount are entered by Storekeeper at time of withdrawal from Stores

ventive maintenance job under the jurisdiction of the inspector. The crew chief shall study the requirements of the job, consult with the cost center supervisor, the master mechanic, a staff member of the engineering department or the plant engineer, secure necessary prints of drawings, check for availability of material for jobs, initiate necessary requisitions (Fig. 9) and determine tentatively the number of man-ours required to complete the job.

After the requirements of the job are known, all necessary preliminary work is completed, and the work order has been fitted into an approved schedule for the section, the crew chief will either perform the work himself or assign it to a qualified mechanic or mechanics, apprentices, and helpers.

The dispatcher will be located adjacent to the sectional location blackboard (Fig. 10). This board will list the names of all employees, groups and sections according to craft or trade. After each employee's name there will be a space wherein may be written the number of the work order on which the employee is currently working. When an employee is given a work order on which to work, he will generally mark in the space after his name the number of this work order. When this is not possible, the number will be written in by the crew chief or the dispatcher or some other designated employee. This number is to remain on the board until the job is completed and work order is returned to the crew chief. The employee is then given a new work order and upon receipt the old number will be erased and the number of the new work order will be written after the mechanic's name on the blackboard. This board will serve as a check to the dispatcher on the current status of work orders and will also permit the working location of employees being known at all times. While it is the responsibility carried jointly by the mechanic and the crew chief to keep the board posted with current work order numbers, it is also the responsibility of the dispatcher to see that this procedure is properly maintained.

While it is necessary and desirable that the work order form be handled in the foregoing manner, there will be occasions when emergencies will cause the dispatcher to contact the plant engineer, master mechanic, chief electrician, other crew chiefs or mechanics in some part of the plant by telephone or intercommunicating system and relay the work order information, together with the work order number, verbally; thus, the work may be gotten under way before the work order form can be properly filled out and delivered to the mechanic in accordance with this procedure. In cases of this kind when the work order is issued, the dispatcher will write in the information that it is a confirmation of the verbal order that he has already issued with the time and name of the employee to whom the verbal order was issued. The completion of the work order will be handled in the regular manner. An "Emergency" is defined as an imperative need to immediately restore a machine or piece of equipment to production when production is interrupted by a machine or equipment failure, or to immediately remove a safety hazard which has placed personnel or any part of the plant in jeopardy.

The plant engineer will hold daily "Schedule Meetings" attended by all crew chiefs and affected members of the staff of the engineering department. This daily meeting is for the purpose of scheduling work orders which have been issued and are to be fitted into the activity program for the time when each job is requested. It will not be necessary to schedule routine or meet the requirements of the work order and balance small jobs but all major jobs will be so scheduled to meet the requirements of the work order and balance out the man-hour capacity available in the plant engineering department. This is usually done at 11:45 each

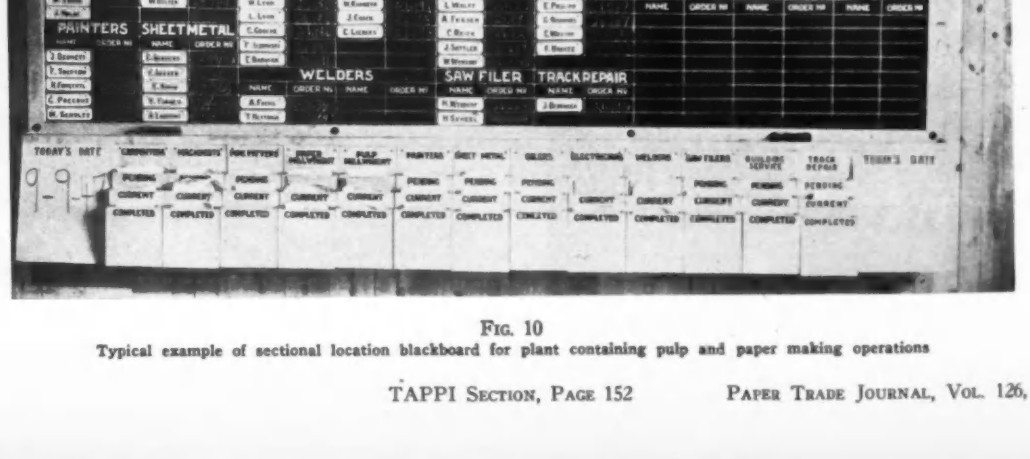


FIG. 10

Typical example of sectional location blackboard for plant containing pulp and paper making operations

DESCRIPTION OF WORK DONE: Replaced with new babbitt. Checked bearing and found groover too badly worn to scrape

WHAT CAUSED THIS TROUBLE OR REPAIR WORK? Load too heavy for old bearing. Seems to be some vibration of plug.

WHAT CAN BE DONE TO PREVENT IT FROM HAPPENING AGAIN? Put on roller bearings like we have on No. 2 Jordan.

WORK COMPLETED: Bob Smith (SIGNATURE OF MECHANIC) DATE 7-14-47

WORK INSPECTED: Henry Brown (SIGNATURE OF INSPECTOR) DATE 7-14-47

WORK APPROVED: John Hanson (SIGNATURE OF FOREMAN REQUESTING WORK) DATE 7-16-47

RETURN THIS ORDER TO THE DISPATCHER IMMEDIATELY UPON COMPLETION OF WORK

FIG. 11

Reverse side of completed Work Order. Note suggestion offered by mechanic

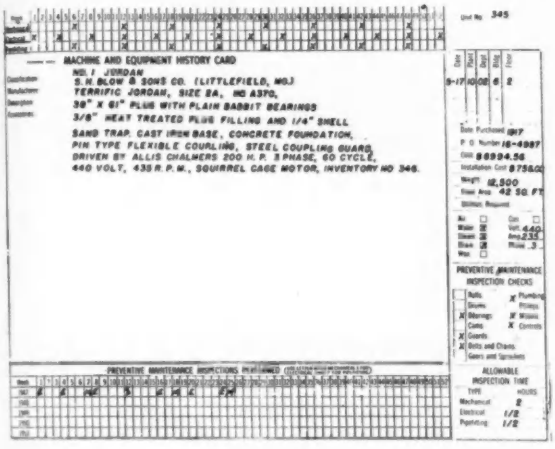


FIG. 12

Front side of typical Machine adn Equipment History Card. Note use of card for preventive maintenance program

morning to permit prompt adjournment with the 12:00 noon whistle.

Completion of Work

After the job is completed the mechanic or mechanics who have been performing the work will write in on the work order, reverse side, (Fig. 11) the description of the work done and the cause of the trouble, if repair work, and any suggestions or thoughts on what can be done to prevent the trouble from occurring again. They will sign their names for "Work Completed" and date on which the job was finished. When it is convenient for any member of the crew who has worked on the job to do so, he will secure the signature of the cost center supervisor for whom the work was done. When it is not convenient for the mechanic to secure this signature it will be done by the crew chief or inspector. The completed work order form is then returned to the crew chief.

When the original of the work order form is presented for signature, the cost center supervisor will have an opportunity to check the hours charged to the job. From this check he may transcribe the number of hours to his own blue copy of the work order form for permanent record and transfer the blue copy to a completed file in his own office. If the job is satisfactory, the cost center supervisor will indicate so by his signature and return to the person presenting it for his approval. If the job is not satisfactory, either in quality of workmanship, failure to do work required, or if the number of hours charged to the job seems excessive, the cost center supervisor will withhold his approval signature and inform the mechanic or crew chief of the reasons for doing so. After the requirements of the work order are satisfactorily met the cost center supervisor will then sign the work order as indicated above.

After the work order is completed, the work order form will be returned by the mechanic to the crew chief. In case the form was retained by the crew chief during actual progress of the job it will be furnished the mechanic for completion upon notification that the job has been finished. The crew chief shall then check date, clock number, hours, description of work done, the cause of the trouble (if repair work), as determined by the mechanic, and for any suggestions or thoughts of the mechanic of what should be done to prevent the cause of the trouble from recurring.

After checking the work order and the job to see that the requirements of the work order have been fulfilled, the crew chief or inspector will sign approval and indicate the date. If it has not been convenient for the mechanic to do so, the crew chief will secure the approval signature of the cost center supervisor for whom the work was done. The completed work order form will then be placed in the "Completed" pigeon hole at the location blackboard for pickup by the dispatcher at the end of the shift. All work order forms which have been issued to the crew chief and which have not been assigned to a mechanic or worked on will be kept in the "Pending" pigeon hole at the location blackboard for the crew chief to which it has been assigned.

Work orders which take more than one shift to complete shall have the time entered for all mechanics who have worked on the work order during the shift and be placed in the "Current" pigeon hole at the location blackboard during the last 15 minutes of the shift. The dispatcher will take off the time as required and return the work order to the "Current" file within 2 hours after the beginning of the next shift. The crew chief will pick up the work order during the next shift and repeat this process if the job carries over to another shift.

Record of Work Done

After the work order is completed according to its requirements, the original (white) is returned to the dispatcher by the crew chief or inspector the same day that work is completed. Should the work order take more than a day in completion, the dispatcher will collect all outstanding work orders, with the completed work orders, and transcribe from them a summary of the work order numbers, number of hours worked, and au-

REPAIR AND MAINTENANCE HISTORY

DATE MO.	DAY	YR.	W. O. NO.	LABOR HOURS	MATERIAL COST	WORK ORDER DESCRIPTION	DATE MO.	DAY	YR.	W. O. NO.	LABOR HOURS	MATERIAL COST	WORK ORDER DESCRIPTION
1	13	47	127	80	628 50	Refill Plug & Shell							
1	16	47	143	14	1 50	Grind Jordan							
2	11	47	192	2	1 00	Hot Bearing							
2	19	47	318	1	00	Tighten Packing							
3	6	47	486	2½	1 00	Motor Bearing Hot							
3	7	47	489	12	6 84	Rebabbit Motor Bearing							
4	13	47	619	8	00	Str. Flex. Coup. Pins							
5	16	47	762	20½	00	Chip Plug & Shell							
7	10	47	1167	60	628 50	Refill Plug & Shell							
7	13	47	1202	12½	1 50	Grind Jordan							
7	14	47	1247	6	5 11	Replace Thrust Bearing							
7	16	47	1323	1½	2 00	Repack Jordan							
7	24	47	1416	2	2 95	Repl. Coup. Bolt & Str. Pin							
9	9	47	1649	26½	00	Chip Plug & Shell							
9	12	47	1738	9	5 40	Replace Thrust Bearing							

FIG. 13

Reverse side of same Machine and Equipment History Card with typical entrees of completed Work Orders

thorization numbers for each employee in the engineering section for that day. The dispatcher shall enter this summary on a daily Time report and return the uncompleted work orders to the sectional crew chiefs, inspectors, or mechanics from whom they were received. He shall forward the daily time report to the plant accounting department before 10 a.m. the following work day.

When completed work orders are received, the dispatcher will check for description of work done, cause of trouble, possibility of prevention of recurring, signatures of mechanics, crew chief, inspector, and of cost center supervisor as provided for on back of work order form. Upon completion of checking of the completed work order the dispatcher will transmit the information from each work order to the machine and equipment history card (Figs. 12 and 13) and Building History Record (Figs. 14 and 15) in accordance with the description of the work requested and performed. He will enter the total number of hours involved on the separate history card for each machine, piece of equipment, or other item carrying an inventory number; the building history record will be completed from the work order form by the number of building and location such as floor, bay, etc. After completion of these history entries, the dispatcher will forward the original work order form to the plant engineer and will remove from the "Active" file the third copy (yellow) and transfer it to the "Completed" dispatcher's work order file.

The plant engineer or a designated member of his staff will review the completed work order forms checking the total number of man-hours against the work performed as a general measure of the effectiveness of the engineering and maintenance department and he will note the suggestions carried on the reverse side for action to be taken. This action may be in the form of a field survey, engineering design, issuance of another work order as a follow up, or preparation of an expenditure authorization which may be justified to carry out the suggestion. If the work order is covered by an authorization number instead of a routine account classification, the plant engineer will check his project records and record the work done on the project as indicated on the completed work order forms. He may also do this if the work order is the result of any engineering activity which may be carried as a project in the files of the engineering department.

Upon the completion of this check (which will take only a few minutes for the average number of work orders completed in one day) the plant engineer will forward the completed work orders to the plant accounting department for their disposition. This should be done each day not later than 10:00 a.m.

The plant engineer shall periodically audit the machine and equipment history cards and the building history records and check the frequency and cost of the construction and maintenance items accumulating against the machinery, equipment, and buildings of his plant. The benefits to be derived from this type of control are obvious.

System Benefits

Summarizing, this systematic operation of construction and maintenance departments will:

1. Eliminate costly duplication and confusion of having more than one order or request issued for the same job.

2. Avoid misunderstanding, garbled instruction, failure of orders to reach proper mechanics in time for prompt repair, and other costly time-consuming causes resulting in unauthorized or ill-informed persons from

FORM NO. 510

BUILDING HISTORY CARD

DIVISION Menasha
BUILDING NO. 20
FILE NO.
SHEET 1 OF 1

Warehouse (Wax)

CONSTRUCTION: Ordinary - joists and girders

DESCRIPTION: One story - floor four (4) ft. above street grade
USEAGE: Wax paper storage and shipping
BUILT 1927 CONTRACTOR C. R. Meyer and Sons ENGINEER Marathon (Roman)

PHYSICAL PROPERTIES: Composition roof, insulated, dry system sprinkler, maple finish floor, corrugated iron from grade to floor. Loading platforms, south and west sides.

FLOOR	FLOOR Load Capacity	CEILING Clearance	AREA In Sq. Feet	VOLUMN In Cubic Feet	BAY Size
BASEMENT None					
FIRST FLOOR	175	9-22	14,000	224,000	16 x 16
SECOND FLOOR None					
THIRD FLOOR None					
FOURTH FLOOR None					

HEATING: None

VENTILATION: None except doors - no windows

LIGHTING: 100 Watt RLM 16 ft. centers 7 F.C.

MAINTENANCE INSPECTIONS PERFORMED

WEEK	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52
1947			X																	X																																		
1948																																																					
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1950																																																					
1951																																																					

FIG. 14

Typical Building History Card of a building unit. Note use for preventive maintenance program of buildings

REPAIR AND MAINTENANCE HISTORY

DATE	LABOR	MATERIALS	WORK ORDER DESCRIPTION	DATE	LABOR	MATERIALS	WORK ORDER DESCRIPTION
2-14-47	211	$407.00	Paint interior of building 2 coats				
3-6-47	4	"	Repair Loading Door				
4-21-47	12	5.60	Repair Truck Loading Dock				
5-3-47	6	"	Repair Lighting Panel				
6-11-47	8	"	Flush out Sprinklers				
6-28-47		310.00	Repair and Mop Roof				
7-17-47	4	"	Repair Truck Loading Dock				
8-6-47	3	"	Repair Loading Door				
9-1-47	2	5.25	Replace Sprinkler Valve.				

FIG. 15

Reverse side of same Building History Card showing typical completed Work Orders entered

production departments informally requesting work to be done without use of proper channels.

3. Afford an immediate means of cost center supervisors to check costs of each job and impose reasonable limits of control for the supervisors to assist the plant engineering department in maintaining better working efficiency.

4. Better serve all construction and maintenance requirements, especially expediting emergency work.

5. Secure high quality of workmanship.

6. More readily reveal "idle" time with this control.

7. Afford means for scheduling of all construction and maintenance working forces and readily accessible knowledge of the maintenance of this schedule.

8. Permit positive operation of any type of preventive maintenance program.

9. Maintain knowledge of current distribution and location of all members of the construction and maintenance department for immediate availability for emergency.

10. Keep cost of construction and maintenance available for determinining operating costs of fixed assets, true comparative costs for future estimates and information available for more correct budgeting figures.

11. Permit cost of construction and maintenance to be controlled by each job instead of periodic averages.

12. Make available to the engineering supervisor a source of practical information of job experience that could not be secured except through this type of systematic operation of maintenance and construction departments.

Discussion by Roland A. Packard, Chief Engineer, Smith Paper, Inc., Lee, Mass.

The procedure given by Mr. Dryden certainly points the way for paper and pulp mills as well as other types of manufacturing in handling more efficiently construction and maintenance departments. The maintenance department has far more complications than the construction department and, therefore, will be given greater analytical attention. Construction work in all its branches has been more generally carried to a higher level of efficiency than maintenance work. This latter department in recent years has taken on a new aspect working toward the realm of preventative maintenance; and it is with this thought in mind that paper mill management is looking forward not only to a reduction in the cost of doing a job but also of greater importance, the elimination as far as possible in the down time of a production machine due to mechanical or electrical failure.

Regarding the so-called dispatcher, he is the key man to keep jobs properly scheduled and advise paper and pulp mill supervisors when a particular job in which they are interested will be completed. Some mills may say that their organization is too small to warrant having a dispatcher. This is easily overcome by using a part-time man for this function and use the balance of his time for other items of importance in the operation of a maintenance department. I am in disagreement in the manner of making out the work order. This should never be done by the dispatcher but by the mill supervisor who has the authority to request the job to be done. Certainly, a supervisor should never be in this position unless he is qualified: first, to know what should be done and second, to give a perfectly clear description of the work involved. In the event, he should need advice he should see a maintenance man, the head millwright or an engineer who are available to help him. Telephoning description of a job to a dispatcher has the weakness of entrance of error or misunderstanding. True enough, emergency jobs may have to be handled over the telephone with the dispatcher. The number of the work order should be given together with a brief description of the work involved. A temporary substitute job order may be filled out by the dispatcher and inserted on a control board until the regular order has been received and put in its place.

It is always well to recognize other levels of importance than just emergency and regular jobs as referred to by the author. This is easily done by assigning priority symbols, e.g. AAA—means emergency, or a job of extreme importance; AA—a job of importance but is at a lower level which must be done as promptly as possible; A—a job which must be done as soon as possible but can be delayed as much as two or three weeks; B—a job which need not be done possibly in a month or two; but will afford entrance of the subject into the dispatcher's control system enabling the respective maintenance foremen to know what is ahead of them and make corresponding plans, as well as, arrangements for the procurement of the necessary materials.

The matter of keeping cost is of importance, however, it must be pointed out that no one maintenance job of the same description will cost the same because of the difference in conditions when the same job is done on different machines,—particularly where these machines have accomplished the same objective but be of different design.

The value of daily "schedule meetings" is questionable. The dispatcher should be a man who has had sufficient experience of all types of maintenance work so that by conferring with a mill supervisor who has requested work be done, can properly schedule with the aid of priority letters.

The checking of a completed job is an item which very often is not taken care of properly. It is something which should be emphasized with a set up of maintenance control, since there is less chance of subsequent

trouble in the operation of the machine, and consequently less possibility of loss of production.

In the summary of the paper, reference is made to the elimination of costly duplication and confusion of having more than one order or request for the same job. In a properly operated system there will be but one supervisor to make a request for any single job. In the event that an assistant shall make out a job order, naturally, it should be signed by his superior.

Item two of the summary of avoiding garbled instruction, etc.,—I feel that the changes described above will assist in preventing any such occurrence. Any engineer responsible for maintenance work can study this paper and obtain a great deal of constructive information for the improvement of the average system used daily in mill and factory. In passing, I might mention that the subject of preventative maintenance has not been stressed sufficiently by Mr. Dryden. This is a subject which can be most properly handled through the use of the Kardex System where all machines and parts are carefully noted, and in addition give frequency of inspection.

TAPPI Ohio Section Discusses Control Testing

The Ohio Section of TAPPI received a mass of most valuable information on control testing at their dinner meeting held in the Hotel Manchester at Middletown, Ohio, on February 10. Every technical man concerned with control testing in his mill often wonders which tests his fellow technicians in other mills consider most important, with what regularity they make them, and whether they may have developed some or are using some which he may be overlooking. Last year the Section members exchanged information on short cuts in testing procedures and found that so much mutually helpful information could be made available that a meeting was set aside this year to exchange information on which materials the mills test, where production control tests are made, which product qualities are tested, how many of each of these are made, why some of these are made and others are not and how much time is devoted in the various mills to this work. All again pronounced the novel type of meeting highly successful.

The committee whose untiring efforts and fine cooperation made this meeting successful was headed by Ed. Brandon of the Howard Paper Mills, Inc., who also led the discussion at the meeting. The other members of the committee were: J. H. Moyer of the Champion Paper and Fibre Company, Edward Lum of the Beckett Paper Company, Herbert A. Smith of the Mead Corporation, E. O. Knapp of the Auglaize Box Board Company, Don Goodman of the Sorg Paper Company, and S. Richard Holmes of the Gardner Richardson Company. Much assistance was also given by D. M. Yost of the Sorg Paper Company and Chairman of the Ohio Section, Phil S. Cade of the Harding Jones Paper Company and Vice-President of the Ohio Section and Art Thurn of the Champion Paper and Fibre Company and Chairman of the Program Committee of the Ohio Section.

The information was gathered by sending a detailed questionnaire, requiring for the most part only a check mark in the appropriate column, to each of the sixty mills in the Ohio Section territory. The response to the questionnaire was good. The mills replying represented more than 80 percent of the production of the territory covered.

The grades of papers made by the various mills reporting and also of the individual mills varied widely, which in some cases made classification rather difficult. For simplicity, however, they were all classified in one of the following three grade classifications: fine papers and specialties, coarse papers and boards, and straw space allowed them to indicate which they never made.

The information collected through the questionnaires was carefully tabulated and correlated. Mimeographed copies of the results were distributed to all replying to the questionnaire and at the meeting for all to follow during the meeting and to study later. These consisted of seven pages of tables and two pages of explanatory notes, which because of their length cannot be included here. Since the tables cannot be condensed further, only a few remarks to give an idea of the material covered is boards for corrugating. The questionnaire mailed out provided spaces for the mills to list the tests they make as being made regularly or occasionally and a third included here. The full value of the data collected is apparent only after a careful study of each of the nearly 300 items listed.

Wood pulp was the first item on the list of tests made on raw materials. The replies showed that nearly all the mills receiving wood pulp test it for moisture, brightness or color and for dirt, and that the majority test it regularly. The same applies to straw. Over half of the mills never test waste paper while the others test it occasionally for moisture and dirt.

A majority of the mills only occasionally test fillers and dyestuffs and most of them never test starch and alum. Again, rosin size, bleach and process water are checked only occasionally by most of the mills while soda ash, caustic soda and lime are more often than not never checked.

There were fifty-one tests listed under the heading of tests on finished paper. Here, of course, regularity in testing was the rule, particularly for weight, moisture, caliper and mullen. Although the specifications for the papers falling into the three grade groups are very different, it was interesting to note how many of these for one group of grades are also occasionally applied to other grades.

A very informative section of the report was that showing the man hours per 100 tons of production each of the mills devote to raw material, in process, control and record tests. In general the total man hours per 100 tons of production in each mill is the highest in the fine paper and specialty mills, the coarse paper and board mills are next and the straw mills reported the lowest figures. There was a wide variation in the figures for each group. For example, the total man hours reported varied from 10 to 362 in the first group, from 4 to 82 in the second group and from 3 to 54 in the last group. All the fine paper and specialty mills reported having laboratories, 50 percent of the coarse paper and board mills and 38 percent of the straw mills reported having laboratories. A wide variation in time spent on the various types of testing was also apparent, but most of the mills reported that they devoted the largest portion of their testing time to the testing of the finished paper.

Recent Developments in Sulphite Pulping*

By John F. Inderdohnen[1]

Abstract

Reference is made to progress in use of circulating systems and chip distribution for sulphite pulp mills. The importance of close control of the cooking acid strength is stressed, factors are cited which are involved in this control, specifically high SO_2 gas strength, efficient SO_2 gas cooling, strong uniform raw acid, independent recovery of the SO_2 in acid stroage and relief recovery tanks and proper recovery of digester relief gas and heat. Examples are cited of some mill practices.

In 1940 *(1)* and 1942 *(2)* the author presented papers advocating forced circulation for sulphite digesters. In the few years since then much experience has been gained in the possibilities of forced circulation. By the use of properly designed systems including proper chip distribution, mills have increased their digester production by as much as 50%. W. K. Voss, Assistant Sulphite Superintendent of the Ontario Paper Co. at Thorold, Ontario, for example, in his paper presented to the 1947 summer meeting of the Canadian Technical Association *(3)* points out that their sulphite mill is obtaining 17.52 air dry tons sulphite pulp per cook from a 15 by 49 foot digesters rated at 12.3 tons. The Spruce Falls Power & Paper Co. is producing as much as 18.3 air dry tons sulphite pulp per cook from 15 by 47 foot digesters rated at 11.7 tons. In both instances the cooks are on a 7½ hour basis. Cover to cover time is about 8 hours and 45 minutes to 9 hours and 10 minutes. At Thorold an excellent glassine pulp is produced as well as newsprint grade.

One controlling factor in these increased digester yields is a close control of the cooking acid strength. At Ontario Paper Co., for instance, only 1,400 gallons cooking acid is used per ton of air dry pulp. At Spruce Falls Power & Paper Co. the figure is 1,600 gallons per ton of airdry pulp. The average for mills not using such systems is about 2,200 gallons per ton of air dry pulp.

The gallons of acid used becomes a factor of the density of packing plus the moisture in the chips. With 40 to 50% chip moisture and dense packing there isn't room for a large volume of acid per digester cooking charge. To compensate for this decreased acid volume stronger acid must be provided to accomplish the proper cooking of the wood chips.

In the author's paper in 1940 he advocated the use of 5% cooking acid and adjusting the cooking temperatures and time as well as relief of the digester to compensate for variations in wood moisture, etc. At that time the average cooking acids generally used were around 4 to 4.5%. Today cooking acids of 7½ to 8% are advocated, and even higher when digester pressures will permit. The added concentration compensates for the lower acid volumes used, and seems to give brighter pulps.

Thomas Gerace of the St. Regis Paper Co., in his paper presented to this meeting in 1947 *(4)*, explained a Chemipulp-KC modern acid making system designed to give these higher acid concentrations and low sulphur consumption per air dry ton of pulp.

Operation Factors

The factors involed are:

High SO_2 Gas Strength

Sulphur burning systems are designed to secure 18.5% to 19.5% SO_2 gas. Most commonly used burner systems in sulphite pulp mills give 15 to 16% SO_2 with some of the newer installations attaining 17%. By making 19% or better SO_2 less inerts are handled in the cooling and acid system, higher strength acid can be made, and SO_3, the basis for sulphates, can be reduced to be a negligible factor.

Efficient SO_2 Gas Cooling:

Chemipulp-KC spray type SO_2 gas coolers are gaining rapid acceptance for new installations and replacement of indirect lead coolers.

The spray cooler permits high entering gas temperatures and sudden cooling below the critical point to keep SO_3 formation to a minimum. Any SO_3 present is washed out to maximum residuals of 0.03 to 0.04%. Sublimed sulphur, carbonaceous materials, and ash or other foreign matter are also washed out, resulting in a clean, relatively pure SO_2 gas.

Strong, Uniform Raw Acid:

The early acid systems of the milk of lime type gave operating difficulties such as sludging up of openings and unbalanced operation. The more modern Jenssen towers have had a wide acceptance. They are primarily limited to calcium bisulphite acid systems and involve considerable raw materials handling. Control of acid strength, especially the combined, is difficult and inexact.

The modern milk of lime acid system uses all 316-type stainless steel reversible towers operated under pressure and an efficient bubble cap and tray system. The weak and strong towers are interchanged daily, giving clean operation. Experience indicates that this is practical even when sludge from soda or kraft mills is used.

The optimum results are predicated on high SO_2 gas strength and on operating under higher pressures during warm weather periods. Pressures as high as 7 pounds on the towers, forcing the gas into solution and putting the compressor suction directly on the sulphur burner system, compensates for higher water temperatures.

The ratio of lime or slurry and water to the bubble trays is controlled by a proportioning system to give a control of the acid combined within plus or minus 2.5%. This uniformity of raw acid is reflected in pulp quality due to the better overall control of the cooking acid.

Independent Recovery of the SO_2 From Acid Storage and Relief Recovery Tanks:

The "over" and "reclaimed" gases are isolated by the independent recovery system. They are absorbed by the raw acid and makeup water. This obviates introducing them into the burner gas line, as is common practice. As a result, the burner air intake, relieved of fluctuations especially from digester low pressure relief, is constant and readily controllable.

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* Presented at the Annual Meeting of the Technical Association of the Pulp & Paper Industry, Hotel Commodore, New York, N. Y., Feb. 23-26, 1948.

[1] Member TAPPI; Vice President, Chemipulp Process Inc., Watertown, N. Y.

PROPER RECOVERY OF DIGESTER RELIEF GASES AND HEAT:

The Chemipulp hot acid system is in general use. With high and low pressure accumulators, it gives maximum digester relief absorption and, with the independent recovery system makes maximum use of all available relief gases from all sources, as well as of heat from the digesters.

Incidentally, by the use of the low pressure accumulator the digesters can be relieved down to 15 to 20 pounds and then shaken up with steam to the blowing pressure, to considerably increase the SO_2 recovery.

With such systems the sulphur per ton of pulp will be down to 190 to 200 pounds per air dry ton, and pulp brightness is always perceptibly improved.

Acknowledgment is made to Hercules Powder Company for cooperation in supplying samples.

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TAPPI Notes

Herbert A. Brawn is now superintendent of the Moraine Paper Company Div. of American Envelope Company, W. Carrollton, Ohio.

Arthur L. De Spain, formerly of George F. Hardy Company, is now chemical engineer for the Process Equipment Div., General American Transportation Company, New York, N. Y.

A. M. Gair, formerly of the Smith Paper Company, and more recently a graduate student at the Polytechnic Institute of Brooklyn, is now control and development chemist for Fidelity Products Company, 2 Lackawanna Place, South Orange, N. J. (makers of paper cones for loud speakers).

Joseph E. Hunter, Jr., formerly of the Ecusta Paper Company, is now at the University of South Carolina, Columbia, S. C.

John G. Morrison, formerly of the British Columbia Pulp and Paper Company Ltd., is now in the Central Research and Development Division, Abitibi Power and Paper Company, Ltd., Sault Ste. Marie, Ont.

C. A. Newman is now groundwood superintendent, Quebec North Shore Paper Company, Baie Comeau, Que.

G. S. Witham now represents the Bristol Company at 27 Pearl Street, Hudson Falls, N. Y.

Harry S. Loukes and Aimo K. Klami, technical managers of the United Paper Mills, Ltd., Valkeakoski, Finland, are visiting in the United States.

Richard S. Buckley, formerly of the Fernstrom Paper Mills, Inc., is now associated with Alan C. Dunham, Manufacturer's Agent, Portland, Ore.

D. D. Cameron, service engineer for the Hercules Powder Company, has transferred from Marrero, La. to the Paper Makers Chemical Department of the Company at Wilmington, Del.

Nature and Origin of Life

The Reinhold Publishing Company has just issued Life, Its Nature and Origin, by Jerome Alexander, the famous colloid chemist.

Although the title of this book would appear to indicate an interest somewhat afield from pulp and paper technologists, it is not in this category. Dr. Alexander has been a speaker at TAPPI meetings and has long interested himself in the fundamentals of colloid chemistry and plant life. The purpose of the book is to present in coherent order sufficient facts regarding material biological phenomena to show that life is dominated by catalysis—the direction of chemical charge by surface areas of specific structure and efficiency.

Each topic is treated in an elementary manner and can be easily followed by the general reader. It also offers facts that will appeal to the more advanced student. Among the subjects covered are How Did Life Originate?, The Smallest Particles of Matter, How Molecules Make Masses, What are Living Units?, Catalysis, the Guide of Life, Genetics: The Heritable Transmission of Catalysts, Some Catalytic Aspects of Disease and Drugs, Philosophy, the Guide of Mental Life.

Copies may be obtained from the Book Department of the Technical Association of the Pulp and Paper Industry, 122 East 42nd St., New York 17, N. Y. at $5.00 per copy.

Microscopic Analysis of Paper

A book by L. Vidal, Director of the School of Papermaking, Grenoble, France, entitled L'Analyse Microscopique des Papiers (in French) has recently been made available for sale in the United States and Canada. This book was published in 1939 but the interruption of the war made its distribution in America impossible. Because of its high cost of preparation and printing its previous price has been quite high. However, the recent devaluation of the franc has brought the price within more popular range.

It is a cloth-bound manual, 146 pages, 15½ x 11 and covers such topics as instruments and reagents, agricultural waste fibers, wood pulp fibers, papers, bibliography, plant, anatomical term.

It is illustrated with 72 full page plates, most of which are hand drawn and many colored.

For those who can read French it should be a very interesting and valuable book. It may be obtained from the Book Department of the Technical Association of the Pulp and Paper Industry, 122 East 42nd Street, New York 17, N. Y. at $10.00 per copy.

Mechanical Behavior of High Polymers

The Interscience Publishers, Inc. has just issued High Polymers Volume VI on "Mechanical Behavior of High Polymers," by Turner Alfrey, Jr., Ass't Professor of Polymer Chemistry, Polytechnic Institute of Brooklyn (580 pp. 6 x 9).

The remarkable range of mechanical properties exhibited by high polymers permits them to be used as rubbers, plastics, textile fibers, films, etc. The author attempts to uncover the fundamental principles underlying the mechanical behavior of polymeric structures and to show how this behavior is correlated with the molecular structures involved.

Among the principal subjects covered are: plastoelastic behavior of amorphous linear high polymers; three dimensional cross-linked polymers; crystallization of high polymers; plasticization and solution systems containing high polymers and materials of low molecular weight; and ultimate strength and related properties.

Copies may be obtained from the Book Department of the Technical Association of the Pulp and Paper Industry, 122 East 42nd Street, New York 17, N. Y. at $9.50 per copy.